

Civil Engineering Database Subject Heading Index

The **Civil Engineering Database (CEDB)** is designed to provide free, easy bibliographic access to all ASCE publications. The database covers ASCE documents published since 1970. It provides access to all the journals, conference proceedings, books, standards, manuals, magazines, and newspapers. The index terms below were assigned to papers published in this journal during 2003 from a CEDB subject heading list. The CEDB and subject heading list can be accessed on the Web at <http://www.pubs.asce.org/cedbsrch.html>.

Adjustment

Modeling for Width Adjustment in Alluvial Rivers. —S. V. Chitale; 129(5), 404-7 (2003).

Adsorption

Treatment of Stagnant Zones in Riverine Advection-Dispersion. —Sushil K. Singh; 129(6), 470-3 (2003).

Advection

Advection Tests of Optimal Compact Implicit Scheme. —Ronald Smith and Yongming Tang; 129(5), 408-11 (2003).

Aeration

Effect of Lateral Deflector on Outlet Cavity Lengths. —Meng-Xi Nie, Xu-Sheng Wang, and Guang-Hao Wu; 129(7), 536-40 (2003).

Hydraulic Design of Stepped Spillways. —Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Air water interactions

Effect of Jet Air Content on Plunge Pool Scour. —Stefano Canepa and Willi H. Hager; 129(5), 358-65 (2003).

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. —L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Algorithms

Treatment of Natural Geometry in Finite Volume River Flow Computations. —H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Efficacy of Genetic Algorithm to Investigate Small Scale Aquitard Leakage. —Randall W. Gentry, Daniel Larsen, and Stephanie Ivey; 129(7), 527-35 (2003).

Alluvial channels

Total Load Transport Formula for Flow in Alluvial Channels. —Shu-Qing Yang and Siow-Yong Lim; 129(1), 68-72 (2003).

Bedload Transport in Alluvial Channels. —Miguel Bravo-Espinosa, W. R. Osterkamp, and Vicente L. Lopes; 129(10), 783-95 (2003).

Role of Resistance Coefficient in Seasonal Adjustments in Alluvial Rivers. —S. V. Chitale; 129(11), 915-8 (2003).

Alluvial streams

Modeling for Width Adjustment in Alluvial Rivers. —S. V. Chitale; 129(5), 404-7 (2003).

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. —Jaber H. Almedej and Panayiotis Diplas; 129(11), 896-904 (2003).

Analytical techniques

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. —Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Aquifers

Explicit Estimation of Aquifer Diffusivity from Linear Stream Stage. —Sushil K. Singh; 129(6), 463-9 (2003).

Efficacy of Genetic Algorithm to Investigate Small Scale Aquitard Leakage. —Randall W. Gentry, Daniel Larsen, and Stephanie Ivey; 129(7), 527-35 (2003).

Storage Coefficient and Transmissivity from Residual Drawdowns. —Sushil K. Singh; 129(8), 637-44 (2003).

Australia

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. —Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Automation

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. —William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Backwater

Applicability of Kinematic, Noninertia, and Quasi-Steady Dynamic Wave Models to Unsteady Flow Routing. —Christina W. Tsai; 129(8), 613-27 (2003).

Bayesian analysis

Liquid Volume Fluxes in Stratified Multiphase Plumes. —Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Bed load

Bed-Load Transport Equation for Sheet Flow. —Athol D. Abrahams; 129(2), 159-63 (2003).

Urban Storm Sewer Design: Approach in Consideration of Sediments. —Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. —Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Particle Densimetric Froude Number for Estimating Sediment Transport. —Julián Aguirre-Pe, María L. Olivero, and Alix T. Moncada; 129(6), 428-37 (2003).

Experimental Study of Bed Load Transport through Emergent Vegetation. —Angelina A. Jordanova and C. S. James; 129(6), 474-8 (2003).

Influence of Turbulence on Bed Load Sediment Transport. —B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Bedload Transport in Alluvial Channels. —Miguel Bravo-Espinosa, W. R. Osterkamp, and Vicente L. Lopes; 129(10), 783-95 (2003).

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. —Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. —Jaber H. Almedej and Panayiotis Diplas; 129(11), 896-904 (2003).

Bed load movement

Influence of Turbulence on Bed Load Sediment Transport. —B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Closed-Conduit Bed-Form Initiation and Development. —Stephen E. Coleman, Juan J. Fedele, and Marcelo H. García; 129(12), 956-65 (2003).

Bed ripples

Sand Transport on Steeply Sloping Plane and Rippled Beds. —Jesper Damgaard, Richard Soulsby, Andrew Peet, and Scott Wright; 129(9), 706-19 (2003).

Closed-Conduit Bed-Form Initiation and Development. —Stephen E. Coleman, Juan J. Fedele, and Marcelo H. García; 129(12), 956-65 (2003).

Bed roughness

Response of Velocity and Turbulence to Sudden Change of Bed Roughness in Open-Channel Flow. —Xingwei Chen and Yee-Meng Chiew; 129(1), 35-43 (2003).

Closed-Conduit Bed-Form Initiation and Development. —Stephen E. Coleman, Juan J. Fedele, and Marcelo H. García; 129(12), 956-65 (2003).

Boundary conditions

Impact of Vertical, Turbulent, Planar, Negatively Buoyant Jet With Rigid Horizontal Bottom Boundary. —Alessandra Cavalletti and Peter A. Davies; 129(1), 54-62 (2003).

Bridge abutments

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. —Antonios Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Bridges

Hydrodynamic Loading on River Bridges. —Stefano Malavasi and Alberto Guadagnini; 129(11), 854-61 (2003).

Bridges, piers

Design Method of Time-Dependent Local Scour at Circular Bridge Pier. —Md. Faruque Mia and Hiroshi Nago; 129(6), 420-7 (2003).

Buoyant jets

Impact of Vertical, Turbulent, Planar, Negatively Buoyant Jet With Rigid Horizontal Bottom Boundary. — Alessandra Cavalletti and Peter A. Davies; 129(1), 54-62 (2003).

Vertical Penetration of Double-Diffusive Water Plumes Discharged Vertically Downward. — Asterios Pantokratoras; 129(7), 541-5 (2003).

Calibration

Simultaneous Zonation and Calibration of Pipe Network Parameters. — A. Bascià and T. Tucciarelli; 129(5), 394-403 (2003).

Calibration of Submerged Radial Gates. — A. J. Clemmens, T. S. Strelkoff, and J. A. Replogle; 129(9), 680-7 (2003).

California

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geofrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geofrey Schladow; 129(2), 92-101 (2003).

Cascades

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Case reports

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

Cavitation control

Effect of Lateral Deflector on Outlet Cavity Lengths. — Meng-Xi Nie, Xu-Sheng Wang, and Guang-Hao Wu; 129(7), 536-40 (2003).

Cavities

Effect of Lateral Deflector on Outlet Cavity Lengths. — Meng-Xi Nie, Xu-Sheng Wang, and Guang-Hao Wu; 129(7), 536-40 (2003).

Channel beds

Discretization of Integral Equations Describing Flow in Nonprismatic Channels with Uneven Beds. — Brett F. Sanders, David A. Jaffe, and Allyson K. Chu; 129(3), 235-44 (2003).

Turbulent Flow Over and Within a Porous Bed. — Panayotis Prinos, Dimitrios Sofialidis, and Evangelos Keramaris; 129(9), 720-33 (2003).

Channel bends

Investigation on the Suitability of Two-Dimensional Depth-Averaged Models for Bend-Flow Simulation. — T. Y. Hsieh and J. C. Yang; 129(8), 597-612 (2003).

Channel flow

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Side Outflow from Supercritical Channel Flow. — Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Channel improvements

Aspect Ratio to Maximize Sediment Transport in Rigid Bank Channels. — Guoliang Yu and Graeme Smart; 129(12), 927-35 (2003).

Channels, waterways

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Closed conduits

Closed-Conduit Bed-Form Initiation and Development. — Stephen E. Coleman, Juan J. Fedele, and Marcelo H. García; 129(12), 956-65 (2003).

Coastal environment

Development and Application of Oil Spill Model for Singapore Coastal Waters. — Xiaobo Chao, N. Jothi Shankar, and Sam S. Y. Wang; 129(7), 495-503 (2003).

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Cohesionless sediment

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. — Sarfaraz A. Ansari, Umesh C. Kothiyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Cohesive sediment

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhashish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnapan; 129(3), 230-4 (2003).

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. — Sarfaraz A. Ansari, Umesh C. Kothiyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Cohesiveless soils

Erosion of Sand by Circular Impinging Water Jets with Small Tailwater. — N. Rajaratnam and K. A. Mazurek; 129(3), 225-9 (2003).

Combined sewers

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Compressibility

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. — L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Computation

Comparison of Risk Calculation Methods for a Culvert. — Yanqing Lian and Ben Chie Yen; 129(2), 140-52 (2003).

Advection Tests of Optimal Compact Implicit Scheme. — Ronald Smith and Yongming Tang; 129(5), 408-11 (2003).

Computational fluid dynamics technique

Laminar Pipeline Flow of Wastewater Sludge: Computational Fluid Dynamics Approach. — Tom B. Bechtel; 129(2), 153-8 (2003).

Three-Dimensional CFD Modeling of Self-Forming Meandering Channel. — Nils Reidar B. Olsen; 129(5), 366-72 (2003).

Computer software

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Culverts

Comparison of Risk Calculation Methods for a Culvert. — Yanqing Lian and Ben Chie Yen; 129(2), 140-52 (2003).

Currents

Influence of Turbulence on Bed Load Sediment Transport. — B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Dam breaches

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. — Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Dam design

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Dam failure

Explicit Schemes for Dam-Break Simulations. — C. Zoppou and S. Roberts; 129(1), 11-34 (2003).

Practical Aspects in Comparing Shock-Capturing Schemes for Dam Break Problems. — Francesco Macchione and Maria Assunta Morelli; 129(3), 187-95 (2003).

Dams

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Application of Fuzzy Sets Method to Identify Seepage Path through Dams. — L. Opyrchal; 129(7), 546-8 (2003).

Dams, rockfill

Reservoir Routing using Steady and Unsteady Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaiannajad; 129(6), 448-54 (2003).

Debris

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Sediment Concentration Distribution of Debris Flow. — Hui-Pang Lien and Fang-Wu Tsai; 129(12), 995-1000 (2003).

Deep water

Liquid Volume Fluxes in Stratified Multiphase Plumes. — Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Density

Settling Characteristics of Calcareous Sand. — David A. Smith and Kwok Fai Cheung; 129(6), 479-83 (2003).

Density currents

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Deposition

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnappan; 129(3), 230-4 (2003).

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Design

Design Method of Time-Dependent Local Scour at Circular Bridge Pier. — Md. Faruque Mia and Hiroshi Nago; 129(6), 420-7 (2003).

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Diagnosis

Hydraulic Performance Index of a Sewer Network. — Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Diffusion

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Diffusivity

Explicit Estimation of Aquifer Diffusivity from Linear Stream Stage. — Sushil K. Singh; 129(6), 463-9 (2003).

Dispersion

Analysis and Prediction of Transverse Mixing Coefficients in Natural Channels. — J. B. Boxall and I. Guymer; 129(2), 129-39 (2003).

Treatment of Stagnant Zones in Riverine Advection-Dispersion. — Sushil K. Singh; 129(6), 470-3 (2003).

Diversions

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Drag coefficient

Rolling and Lifting Probabilities for Sediment Entrainment. — Fu-Chun Wu and Yi-Ju Chou; 129(2), 110-9 (2003).

Settling Characteristics of Calcareous Sand. — David A. Smith and Kwok Fai Cheung; 129(6), 479-83 (2003).

Hydrodynamic Loading on River Bridges. — Stefano Malavasi and Alberto Guadagnini; 129(11), 854-61 (2003).

Drainage

Urban Storm Sewer Design: Approach in Consideration of Sediments. — Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Drains

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Drawdown

Storage Coefficient and Transmissivity from Residual Drawdowns. — Sushil K. Singh; 129(8), 637-44 (2003).

Dunes

Closed-Conduit Bed-Form Initiation and Development. — Stephen E. Coleman, Juan J. Fedele, and Marcelo H. García; 129(12), 956-65 (2003).

Dyes

Turbulence Measurements of Dye Concentration and Effects of Secondary Flow on Distribution in Open Channel Flows. — Koji Shiono and Tong Feng; 129(5), 373-84 (2003).

Dynamic models

Dynamic Modeling of Pressure Reducing Valves. — Simon L. Prescott and Bogumil Ulanicki; 129(10), 804-12 (2003).

Eddy viscosity

Turbulence Measurements of Dye Concentration and Effects of Secondary Flow on Distribution in Open Channel Flows. — Koji Shiono and Tong Feng; 129(5), 373-84 (2003).

Energy dissipation

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Entrainment

Rolling and Lifting Probabilities for Sediment Entrainment. — Fu-Chun Wu and Yi-Ju Chou; 129(2), 110-9 (2003).

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Liquid Volume Fluxes in Stratified Multiphase Plumes. — Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Erosion

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhasish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Erosion of Sand by Circular Impinging Water Jets with Small Tailwater. — N. Rajaratnam and K. A. Mazurek; 129(3), 225-9 (2003).

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Self-Cleansing Sewer Design Based on Sediment Transport Principles. — David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. — Simon J. Tait, Ghassan Chebbo, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and

Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Phenomenological Characterization of Vortex Induced Scour. — Fredrick Marelus and Konstantin Kornev; 129(12), 976-84 (2003).

Estuaries

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Europe

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Experimentation

Testing Block Probes for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Experimental Study of Bed Load Transport through Emergent Vegetation. — Angelina A. Jordanova and C. S. James; 129(6), 474-8 (2003).

Numerical and Experimental Study on Two-Dimensional Flood Flows with and without Structures. — Mirei Shige-eda and Juichiro Akiyama; 129(10), 817-21 (2003).

Finite difference method

Practical Aspects in Comparing Shock-Capturing Schemes for Dam Break Problems. — Francesco Macchione and Maria Assunta Morelli; 129(3), 187-95 (2003).

Finite elements

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Fish management

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Discharge Rating Equation and Hydraulic Characteristics of Standard Denil Fishways. — Mufeed Odeh; 129(5), 341-8 (2003).

Fishways

Discharge Rating Equation and Hydraulic Characteristics of Standard Denil Fishways. — Mufeed Odeh; 129(5), 341-8 (2003).

Flash floods

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. — Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Flocculation

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnappan; 129(3), 230-4 (2003).

Flood peaks

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. — Jaber H. Almedeij and Panayiotis Diplas; 129(11), 896-904 (2003).

Flood routing

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Applicability of Kinematic, Noninertia, and Quasi-Steady Dynamic Wave Models to Unsteady Flow Routing. — Christina W. Tsai; 129(8), 613-27 (2003).

Design of Circular Urban Storm Sewer Systems Using Multilinear Muskingum Flow Routing Method. — Hossein M. V. Samani and Saeed Jebelifar; 129(11), 832-8 (2003).

Floods

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Numerical and Experimental Study on Two-Dimensional Flood Flows with and without Structures. — Mirei Shige-eda and Juichiro Akiyama; 129(10), 817-21 (2003).

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Floodwaves

Applicability of Kinematic, Noninertia, and Quasi-Steady Dynamic Wave Models to Unsteady Flow Routing. — Christina W. Tsai; 129(8), 613-27 (2003).

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. — Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Flow characteristics

Two-Phase Flow Characteristics of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 661-70 (2003).

Flow distribution

Turbulence Measurements of Dye Concentration and Effects of Secondary Flow on Distribution in Open Channel Flows. — Koji Shiono and Tong Feng; 129(5), 373-84 (2003).

Flow measurement

Calibration of Submerged Radial Gates. — A. J. Clemmens, T. S. Strelkoff, and J. A. Replogle; 129(9), 680-7 (2003).

Flow simulation

Investigation on the Suitability of Two-Dimensional Depth-Averaged Models for Bend-Flow Simulation. — T. Y. Hsieh and J. C. Yang; 129(8), 597-612 (2003).

Numerical and Experimental Study on Two-Dimensional Flood Flows with and without Structures. — Mirei Shige-eda and Juichiro Akiyama; 129(10), 817-21 (2003).

Fluid

Jet Interaction in a Still Ambient Fluid. — H. J. Wang and M. J. Davidson; 129(5), 349-57 (2003).

Fluid dynamics

Three-Dimensional CFD Modeling of Self-Forming Meandering Channel. — Nils Reidar B. Olsen; 129(5), 366-72 (2003).

Fluid flow

Phenomenological Characterization of Vortex Induced Scour. — Fredrick Marelus and Konstantin Kornev; 129(12), 976-84 (2003).

Fluid mechanics

Testing Block Probes for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Flumes

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Flushing

Sewer-Sediment Control: Overview of an Environmental Protection Agency Wet-Weather Flow Research Program. — Chi-Yuan Fan, Richard Field, and Fu-hsiung Lai; 129(4), 253-9 (2003).

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Fracture

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Free surface

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. — L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Friction factors

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Froude number

Particle Densimetric Froude Number for Estimating Sediment Transport. — Julián Aguirre-Pe, María L. Olivero, and Alix T. Moncada; 129(6), 428-37 (2003).

Vertical Penetration of Double-Diffusive Water Plumes Discharged Vertically Downward. — Asterios Pantokratoras; 129(7), 541-5 (2003).

Fuzzy sets

Application of Fuzzy Sets Method to Identify Seepage Path through Dams. — L. Opyrchal; 129(7), 546-8 (2003).

Gates

Calibration of Submerged Radial Gates. — A. J. Clemmens, T. S. Strelkoff, and J. A. Replogle; 129(9), 680-7 (2003).

Geometry

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Geomorphology

Bed-Load Transport Equation for Sheet Flow. — Athol D. Abrahams; 129(2), 159-63 (2003).

Gravel

Surface-based Transport Model for Mixed-Size Sediment. — Peter R. Wilcock and Joanna C. Crowe; 129(2), 120-8 (2003).

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. — Jaber H. Almedeij and Panayiotis Diplas; 129(11), 896-904 (2003).

Grid systems

Three-Dimensional CFD Modeling of Self-Forming Meandering Channel. — Nils Reidar B. Olsen; 129(5), 366-72 (2003).

Ground water

Explicit Estimation of Aquifer Diffusivity from Linear Stream Stage. — Sushil K. Singh; 129(6), 463-9 (2003).

Head, fluid mechanics

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Hydraulic jets

Jet Interaction in a Still Ambient Fluid. — H. J. Wang and M. J. Davidson; 129(5), 349-57 (2003).

Calibration of Submerged Radial Gates. — A. J. Clemmens, T. S. Strelkoff, and J. A. Replogle; 129(9), 680-7 (2003).

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. — Sarfaraz A. Ansari, Umesh C. Kothiyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Hydraulic jump

Calibration of Submerged Radial Gates. — A. J. Clemmens, T. S. Strelkoff, and J. A. Replogle; 129(9), 680-7 (2003).

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Hydraulic models

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Applicability of Kinematic, Noninertia, and Quasi-Steady Dynamic Wave Models to Unsteady Flow Routing. — Christina W. Tsai; 129(8), 613-27 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Flume for Teaching Spatially Varied Open-Channel Flow. — Joel Cahoon and Takashi Hoshino; 129(10), 813-6 (2003).

Hydrodynamic Loading on River Bridges. — Stefano Malavasi and Alberto Guadagnini; 129(11), 854-61 (2003).

Liquid Volume Fluxes in Stratified Multiphase Plumes. — Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Hydraulic networks

Dynamic Modeling of Pressure Reducing Valves. — Simon L. Prescott and Bogumil Ulanicki; 129(10), 804-12 (2003).

Hydraulic performance

Hydraulic Performance Index of a Sewer Network. — Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Hydraulics

Hydraulics of Bottom Rack Intake. — Sandro Brunella, Willi H. Hager, and Hans-Erwin Minor; 129(1), 2-10 (2003).

Effect of Jet Air Content on Plunge Pool Scour. — Stefano Canepa and Willi H. Hager; 129(5), 358-65 (2003).

Hydrodynamic forces

Numerical and Experimental Study on Two-Dimensional Flood Flows with and without Structures. — Mirei Shige-eda and Juichiro Akiyama; 129(10), 817-21 (2003).

Hydrodynamic pressure

Hydrodynamic Loading on River Bridges. — Stefano Malavasi and Alberto Guadagnini; 129(11), 854-61 (2003).

Hydrodynamics

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhasish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Use of Steady-State Pump Head-Discharge Curve for Unsteady Pipe Flow Applications. — A. M. Al-Khomairi; 129(12), 1001-6 (2003).

Hydrologic models

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Hydrostatics

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Inflow

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

Instrumentation

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Intakes

Hydraulics of Bottom Rack Intake. — Sandro Brunella, Willi H. Hager, and Hans-Erwin Minor; 129(1), 2-10 (2003).

Integral equations

Discretization of Integral Equations Describing Flow in Nonprismatic Channels with Uneven Beds. — Brett F. Sanders, David A. Jaffe, and Allyson K. Chu; 129(3), 235-44 (2003).

Interactions

Jet Interaction in a Still Ambient Fluid. — H. J. Wang and M. J. Davidson; 129(5), 349-57 (2003).

Internal waves

Evidence of High Vertical Wave-Number Behavior in a Continuously Stratified Reservoir: Boadella, Spain. — Joaquim Pérez-Losada, Elena Roget, and Xavier Casamitjana; 129(9), 734-7 (2003).

Iowa

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Lakes

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geoffrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geoffrey Schladow; 129(2), 92-101 (2003).

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Laminar flow

Laminar Pipeline Flow of Wastewater Sludge: Computational Fluid Dynamics Approach. — Tom B. Bechtel; 129(2), 153-8 (2003).

Leakage

Efficacy of Genetic Algorithm to Investigate Small Scale Aquitard Leakage. — Randall W. Gentry, Daniel Larsen, and Stephanie Ivey; 129(7), 527-35 (2003).

Levees

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Lift coefficients

Rolling and Lifting Probabilities for Sediment Entrainment. — Fu-Chun Wu and Yi-Ju Chou; 129(2), 110-9 (2003).

Hydrodynamic Loading on River Bridges. — Stefano Malavasi and Alberto Guadagnini; 129(11), 854-61 (2003).

Lifting

Interaction of Particles and Near-Wall Lift in Slurry Pipelines. — K. C. Wilson and A. Sellgren; 129(1), 73-6 (2003).

Long waves

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Marshes

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Massachusetts

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

Meandering streams

Three-Dimensional CFD Modeling of Self-Forming Meandering Channel. — Nils Reidar B. Olsen; 129(5), 366-72 (2003).

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Measurement

Turbulence Measurements of Dye Concentration and Effects of Secondary Flow on Distribution in Open Channel Flows. — Koji Shiono and Tong Feng; 129(5), 373-84 (2003).

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Methodology

Design of Circular Urban Storm Sewer Systems Using Multilinear Muskingum Flow Routing Method. — Hossein M. V. Samani and Saeed Jebelifard; 129(11), 832-8 (2003).

Mixing

Analysis and Prediction of Transverse Mixing Coefficients in Natural Channels. — J. B. Boxall and I. Guymer; 129(2), 129-39 (2003).

Models

Surface-based Transport Model for Mixed-Size Sediment. — Peter R. Wilcock and Joanna C. Crowe; 129(2), 120-8 (2003).

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. — Antonis Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Jet Interaction in a Still Ambient Fluid. — H. J. Wang and M. J. Davidson; 129(5), 349-57 (2003).

Modeling for Width Adjustment in Alluvial Rivers. — S. V. Chitale; 129(5), 404-7 (2003).

Local Time Stepping for Modeling Open Channel Flows. — Amanda J. Crossley, Nigel G. Wright, and Chris D. Whitlow; 129(6), 455-62 (2003).

Morphology

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Mountain streams

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Mountains

Sediment Concentration Distribution of Debris Flow. — Hui-Pang Lien and Fang-Wu Tsai; 129(12), 995-1000 (2003).

Mud

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Numerical analysis

Local Time Stepping for Modeling Open Channel Flows. — Amanda J. Crossley, Nigel G. Wright, and Chris D. Whitlow; 129(6), 455-62 (2003).

Numerical models

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Three-Dimensional CFD Modeling of Self-Forming Meandering Channel. — Nils Reidar B. Olsen; 129(5), 366-72 (2003).

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Shear Stress Distribution in Partially Filled Pipes. — Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Oil spills

Development and Application of Oil Spill Model for Singapore Coastal Waters. — Xiaobo Chao, N. Jothi Shankar, and Sam S. Y. Wang; 129(7), 495-503 (2003).

One-dimensional flow

Free Overfall in Inverted Semicircular Channels. — Subhasish Dey; 129(6), 438-47 (2003).

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Open channel flow

Hydraulics of Bottom Rack Intake. — Sandro Brunella, Willi H. Hager, and Hans-Erwin Minor; 129(1), 2-10 (2003).

Response of Velocity and Turbulence to Sudden Change of Bed Roughness in Open-Channel Flow. — Xingwei Chen and Yee-Meng Chiew; 129(1), 35-43 (2003).

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhasish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Discretization of Integral Equations Describing Flow in Nonprismatic Channels with Uneven Beds. — Brett F. Sanders, David A. Jaffe, and Allyson K. Chu; 129(3), 235-44 (2003).

Turbulence Measurements of Dye Concentration and Effects of Secondary Flow on Distribution in Open Channel Flows. — Koji Shiono and Tong Feng; 129(5), 373-84 (2003).

Treatment of Natural Geometry in Finite Volume

River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Local Time Stepping for Modeling Open Channel Flows. — Amanda J. Crossley, Nigel G. Wright, and Chris D. Whitlow; 129(6), 455-62 (2003).

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Flume for Teaching Spatially Varied Open-Channel Flow. — Joel Cahoon and Takashi Hoshino; 129(10), 813-6 (2003).

Open Channel Flow through Different Forms of Submerged Flexible Vegetation. — C. A. M. E. Wilson, T. Stoesser, P. D. Bates, and A. Bate-mann Pinzen; 129(11), 847-53 (2003).

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Open channels

Free Overfall in Inverted Semicircular Channels. — Subhasish Dey; 129(6), 438-47 (2003).

Turbulent Flow Over and Within a Porous Bed. — Panayotis Prinos, Dimitrios Sofialidis, and Evangelos Keramaris; 129(9), 720-33 (2003).

Optimization

Storage Coefficient and Transmissivity from Residual Drawdowns. — Sushil K. Singh; 129(8), 637-44 (2003).

Liquid Volume Fluxes in Stratified Multiphase Plumes. — Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Organic matters

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Oscillations

Discretization of Integral Equations Describing Flow in Nonprismatic Channels with Uneven Beds. — Brett F. Sanders, David A. Jaffe, and Allyson K. Chu; 129(3), 235-44 (2003).

Outflow

Side Outflow from Supercritical Channel Flow. — Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. — Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Overflow

Hydraulic Performance Index of a Sewer Network. — Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Parameters

Simultaneous Zonation and Calibration of Pipe Network Parameters. — A. Bascià and T. Tucciarelli; 129(5), 394-403 (2003).

Particle motion

Particle Densimetric Froude Number for Estimating Sediment Transport. — Julián Aguirre-Pe, María L. Olivero, and Alix T. Moncada; 129(6), 428-37 (2003).

Particle size

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. — Jaber H. Almedeij and Panayiotis Diplas; 129(11), 896-904 (2003).

Particles

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

Particulate media

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Penetration

Vertical Penetration of Double-Diffusive Water Plumes Discharged Vertically Downward. — Asterios Pantokratoras; 129(7), 541-5 (2003).

Pipe design

Hydraulic Design of Large-Diameter Pipes. — Fabián A. Bombardelli and Marcelo H. García; 129(11), 839-46 (2003).

Pipe flow

Hydraulic Design of Large-Diameter Pipes. — Fabián A. Bombardelli and Marcelo H. García; 129(11), 839-46 (2003).

Efficient Quasi-Two-Dimensional Model for Water Hammer Problems. — Ming Zhao and Mohamed S. Ghidaoui; 129(12), 1007-13 (2003).

Pipe networks

Simultaneous Zonation and Calibration of Pipe Network Parameters. — A. Bascià and T. Tucciarelli; 129(5), 394-403 (2003).

Pipelines

Interaction of Particles and Near-Wall Lift in Slurry Pipelines. — K. C. Wilson and A. Sellgren; 129(1), 73-6 (2003).

Laminar Pipeline Flow of Wastewater Sludge: Computational Fluid Dynamics Approach. — Tom B. Bechtel; 129(2), 153-8 (2003).

Plumes

Vertical Penetration of Double-Diffusive Water Plumes Discharged Vertically Downward. — Asterios Pantokratoras; 129(7), 541-5 (2003).

Liquid Volume Fluxes in Stratified Multiphase Plumes. — Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Pollutants

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Porous media

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Turbulent Flow Over and Within a Porous Bed. — Panayotis Prinos, Dimitrios Sofialidis, and Evangelos Keramaris; 129(9), 720-33 (2003).

Probability distribution

Rolling and Lifting Probabilities for Sediment Entrainment. — Fu-Chun Wu and Yi-Ju Chou; 129(2), 110-9 (2003).

Pumping tests

Storage Coefficient and Transmissivity from Residual Drawdowns. — Sushil K. Singh; 129(8), 637-44 (2003).

Pumps

Use of Steady-State Pump Head-Discharge Curve for Unsteady Pipe Flow Applications. — A. M. Al-Khomaini; 129(12), 1001-6 (2003).

Rehabilitation

Hydraulic Performance Index of a Sewer Network. — Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Reservoirs

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Reservoir Routing using Steady and Unsteady Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaijannejad; 129(6), 448-54 (2003).

Evidence of High Vertical Wave-Number Behavior in a Continuously Stratified Reservoir: Boadella, Spain. — Joaquim Pérez-Losada, Elena Roget, and Xavier Casamitjana; 129(9), 734-7 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

Resistance coefficients

Hydraulic Design of Large-Diameter Pipes. — Fabián A. Bombardelli and Marcelo H. García; 129(11), 839-46 (2003).

Restoration

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Reynolds number

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Rheology

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Risk analysis

Comparison of Risk Calculation Methods for a Culvert. — Yanqing Lian and Ben Chie Yen; 129(2), 140-52 (2003).

River beds

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. — Antonis Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

River flow

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

River systems

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Rivers

Analysis and Prediction of Transverse Mixing Coefficients in Natural Channels. — J. B. Boxall and I. Guymer; 129(2), 129-39 (2003).

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Role of Resistance Coefficient in Seasonal Adjustments in Alluvial Rivers. — S. V. Chitale; 129(11), 915-8 (2003).

Rocks

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Roughness

Hydraulic Design of Large-Diameter Pipes. — Fabián A. Bombardelli and Marcelo H. García; 129(11), 839-46 (2003).

Roughness coefficient

Role of Resistance Coefficient in Seasonal Adjustments in Alluvial Rivers. — S. V. Chitale; 129(11), 915-8 (2003).

Routing

Reservoir Routing using Steady and Unsteady Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaijannejad; 129(6), 448-54 (2003).

Salt water intrusion

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Sand

Surface-based Transport Model for Mixed-Size Sediment. — Peter R. Wilcock and Joanna C. Crowe; 129(2), 120-8 (2003).

Settling Characteristics of Calcareous Sand. — David A. Smith and Kwok Fai Cheung; 129(6), 479-83 (2003).

Scale effect

Two-Phase Flow Characteristics of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 661-70 (2003).

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Scour

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhasish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. — Antonis Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Effect of Jet Air Content on Plunge Pool Scour. — Stefano Canepa and Willi H. Hager; 129(5), 358-65 (2003).

Design Method of Time-Dependent Local Scour at

Circular Bridge Pier. — Md. Faruque Mia and Hiroshi Nago; 129(6), 420-7 (2003).

Phenomenological Characterization of Vortex Induced Scour. — Fredrick Marelus and Konstantin Kornev; 129(12), 976-84 (2003).

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. — Sarfaraz A. Ansari, Umesh C. Kothiyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Seasonal variations

Role of Resistance Coefficient in Seasonal Adjustments in Alluvial Rivers. — S. V. Chitale; 129(11), 915-8 (2003).

Secondary flow

Investigation on the Suitability of Two-Dimensional Depth-Averaged Models for Bend-Flow Simulation. — T. Y. Hsieh and J. C. Yang; 129(8), 597-612 (2003).

Sediment

Rolling and Lifting Probabilities for Sediment Entrainment. — Fu-Chun Wu and Yi-Ju Chou; 129(2), 110-9 (2003).

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Sediment concentration

Sediment Concentration Distribution of Debris Flow. — Hui-Pang Lien and Fang-Wu Tsai; 129(12), 995-1000 (2003).

Sediment control

Sewer-Sediment Control: Overview of an Environmental Protection Agency Wet-Weather Flow Research Program. — Chi-Yuan Fan, Richard Field, and Fu-hsiung Lai; 129(4), 253-9 (2003).

Aspect Ratio to Maximize Sediment Transport in Rigid Bank Channels. — Guoliang Yu and Graeme Smart; 129(12), 927-35 (2003).

Sediment deposits

Preventing Sediment Deposition in Inverted Sewer Siphons. — Richard W. P. May; 129(4), 283-90 (2003).

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. — Simon J. Tait, Ghassan Chebbi, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Sediment discharge

Total Load Transport Formula for Flow in Alluvial Channels. — Shu-Qing Yang and Siow-Yong Lim; 129(1), 68-72 (2003).

Sediment transport

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhasish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Total Load Transport Formula for Flow in Alluvial Channels. — Shu-Qing Yang and Siow-Yong Lim; 129(1), 68-72 (2003).

Surface-based Transport Model for Mixed-Size Sediment. — Peter R. Wilcock and Joanna C. Crowe; 129(2), 120-8 (2003).

Bed-Load Transport Equation for Sheet Flow. — Athol D. Abrahams; 129(2), 159-63 (2003).

Self-Cleansing Sewer Design Based on Sediment Transport Principles. — David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

Urban Storm Sewer Design: Approach in Consideration of Sediments. — Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Three-Dimensional CFD Modeling of Self-Forming Meandering Channel. — Nils Reidar B. Olsen; 129(5), 366-72 (2003).

Particle Densimetric Froude Number for Estimating Sediment Transport. — Julián Aguirre-Pe, María L. Olivero, and Alix T. Moncada; 129(6), 428-37 (2003).

Experimental Study of Bed Load Transport through Emergent Vegetation. — Angelina A. Jordanova and C. S. James; 129(6), 474-8 (2003).

Influence of Turbulence on Bed Load Sediment Transport. — B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Shear Stress Distribution in Partially Filled Pipes. — Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Sand Transport on Steeply Sloping Plane and Rippled Beds. — Jesper Damgaard, Richard Soulsby, Andrew Peet, and Scott Wright; 129(9), 706-19 (2003).

Bedload Transport in Alluvial Channels. — Miguel Bravo-Espinosa, W. R. Osterkamp, and Vicente L. Lopes; 129(10), 783-95 (2003).

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. — Jaber H. Almedeij and Panayiotis Diplas; 129(11), 896-904 (2003).

Aspect Ratio to Maximize Sediment Transport in Rigid Bank Channels. — Guoliang Yu and Graeme Smart; 129(12), 927-35 (2003).

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

Seepage

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Application of Fuzzy Sets Method to Identify Seepage Path through Dams. — L. Opyrchal; 129(7), 546-8 (2003).

Separation

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Settling velocity

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnappan; 129(3), 230-4 (2003).

Settling Characteristics of Calcareous Sand. — David A. Smith and Kwok Fai Cheung; 129(6), 479-83 (2003).

Sewage

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Sewer design

Self-Cleansing Sewer Design Based on Sediment Transport Principles. — David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

Urban Storm Sewer Design: Approach in Consideration of Sediments. — Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Sewer pipes

Shear Stress Distribution in Partially Filled Pipes. — Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Sewers

Sewer-Sediment Control: Overview of an Environmental Protection Agency Wet-Weather Flow Research Program. — Chi-Yuan Fan, Richard Field, and Fu-hsiung Lai; 129(4), 253-9 (2003).

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Preventing Sediment Deposition in Inverted Sewer Siphons. — Richard W. P. May; 129(4), 283-90 (2003).

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. — Simon J. Tait, Ghassan Chebbi, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Hydraulic Performance Index of a Sewer Network. — Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Shallow water

Explicit Schemes for Dam-Break Simulations. — C. Zoppou and S. Roberts; 129(1), 11-34 (2003).

Shear flow

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

Shear strength

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnappan; 129(3), 230-4 (2003).

Shear stress

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Testing Block Probes for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Shear Stress Distribution in Partially Filled Pipes. — Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Shock

Practical Aspects in Comparing Shock-Capturing Schemes for Dam Break Problems. — Francesco Macchione and Maria Assunta Morelli; 129(3), 187-95 (2003).

Shock waves

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Simulation

Explicit Schemes for Dam-Break Simulations. — C. Zoppou and S. Roberts; 129(1), 11-34 (2003).

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

Singapore

Development and Application of Oil Spill Model for Singapore Coastal Waters. — Xiaobo Chao, N. Jothi Shankar, and Sam S. Y. Wang; 129(7), 495-503 (2003).

Siphons

Preventing Sediment Deposition in Inverted Sewer Siphons. — Richard W. P. May; 129(4), 283-90 (2003).

Slopes

Sand Transport on Steeply Sloping Plane and Rippled Beds. — Jesper Damgaard, Richard Soulsby, Andrew Peet, and Scott Wright; 129(9), 706-19 (2003).

Sludge

Laminar Pipeline Flow of Wastewater Sludge: Computational Fluid Dynamics Approach. — Tom B. Bechtel; 129(2), 153-8 (2003).

Slurries

Interaction of Particles and Near-Wall Lift in Slurry Pipelines. — K. C. Wilson and A. Sellgren; 129(1), 73-6 (2003).

Solid suspension

Sewer-Sediment Control: Overview of an Environmental Protection Agency Wet-Weather Flow Research Program. — Chi-Yuan Fan, Richard Field, and Fu-hsiung Lai; 129(4), 253-9 (2003).

Solids flow

Sediment Concentration Distribution of Debris Flow. — Hui-Pang Lien and Fang-Wu Tsai; 129(12), 995-1000 (2003).

Spain

Evidence of High Vertical Wave-Number Behavior in a Continuously Stratified Reservoir: Boadella, Spain. — Joaquim Pérez-Losada, Elena Roget, and Xavier Casamitjana; 129(9), 734-7 (2003).

Spillways

Effect of Jet Air Content on Plunge Pool Scour. — Stefano Canepa and Willi H. Hager; 129(5), 358-65 (2003).

Two-Phase Flow Characteristics of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 661-70 (2003).

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Stability

Role of Resistance Coefficient in Seasonal Adjustments in Alluvial Rivers. — S. V. Chitale; 129(11), 915-8 (2003).

Steady flow

Free Overfall in Inverted Semicircular Channels. — Subhashish Dey; 129(6), 438-47 (2003).

Storage coefficient

Storage Coefficient and Transmissivity from Residual Drawdowns. — Sushil K. Singh; 129(8), 637-44 (2003).

Storm sewers

Urban Storm Sewer Design: Approach in Consideration of Sediments. — Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Design of Circular Urban Storm Sewer Systems Using Multilinear Muskingum Flow Routing Method. — Hossein M. V. Samani and Saeed Jebelifard; 129(11), 832-8 (2003).

Stormwater management

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Stratification

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geoffrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geoffrey Schladow; 129(2), 92-101 (2003).

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

Stratified flow

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

Stream flow

Treatment of Stagnant Zones in Riverine Advection-Dispersion. — Sushil K. Singh; 129(6), 470-3 (2003).

Stream improvement

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Streams

Explicit Estimation of Aquifer Diffusivity from Linear Stream Stage. — Sushil K. Singh; 129(6), 463-9 (2003).

Subcritical flow

Free Overfall in Inverted Semicircular Channels. — Subhashish Dey; 129(6), 438-47 (2003).

Submerged jets

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhashish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. — Sarfaraz A. Ansari, Umesh C. Kothiyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Submerging

Erosion of Sand by Circular Impinging Water Jets with Small Tailwater. — N. Rajaratnam and K. A. Mazurek; 129(3), 225-9 (2003).

Open Channel Flow through Different Forms of Submerged Flexible Vegetation. — C. A. M. E. Wilson, T. Stoesser, P. D. Bates, and A. Bate-mann Pinzen; 129(11), 847-53 (2003).

Supercritical flow

Free Overfall in Inverted Semicircular Channels. — Subhashish Dey; 129(6), 438-47 (2003).

Side Outflow from Supercritical Channel Flow. — Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Surcharge

Hydraulic Performance Index of a Sewer Network. — Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Surface waves

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Suspended load

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Aspect Ratio to Maximize Sediment Transport in Rigid Bank Channels. — Guoliang Yu and Graeme Smart; 129(12), 927-35 (2003).

Suspended sediments

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

Suspension

Interaction of Particles and Near-Wall Lift in Slurry Pipelines. — K. C. Wilson and A. Sellgren; 129(1), 73-6 (2003).

Self-Cleansing Sewer Design Based on Sediment Transport Principles. — David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Tailwater

Erosion of Sand by Circular Impinging Water Jets with Small Tailwater. — N. Rajaratnam and K. A. Mazurek; 129(3), 225-9 (2003).

Tennessee

Efficacy of Genetic Algorithm to Investigate Small Scale Aquitard Leakage. — Randall W. Gentry, Daniel Larsen, and Stephanie Ivey; 129(7), 527-35 (2003).

Tests

Advection Tests of Optimal Compact Implicit Scheme. — Ronald Smith and Yongming Tang; 129(5), 408-11 (2003).

Three-dimensional flow

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geoffrey Schladow; 129(2), 92-101 (2003).

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Three-dimensional models

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Development and Application of Oil Spill Model for Singapore Coastal Waters. — Xiaobo Chao, N. Jothi Shankar, and Sam S. Y. Wang; 129(7), 495-503 (2003).

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Tidal effects

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Tracers

Treatment of Stagnant Zones in Riverine Advection-Dispersion. — Sushil K. Singh; 129(6), 470-3 (2003).

Tractive forces

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Transient flow

Use of Steady-State Pump Head-Discharge Curve for Unsteady Pipe Flow Applications. — A. M. Al-Khomairi; 129(12), 1001-6 (2003).

Transients

Efficient Quasi-Two-Dimensional Model for Water Hammer Problems. — Ming Zhao and Mohamed S. Ghidaoui; 129(12), 1007-13 (2003).

Transport rate

Particle Densimetric Froude Number for Estimating Sediment Transport. — Julián Aguirre-Pe, María L. Olivero, and Alix T. Moncada; 129(6), 428-37 (2003).

Turbulence

Response of Velocity and Turbulence to Sudden Change of Bed Roughness in Open-Channel Flow. — Xingwei Chen and Yee-Meng Chiew; 129(1), 35-43 (2003).

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. — Antonis Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Influence of Turbulence on Bed Load Sediment Transport. — B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Turbulent flow

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Turbulent Flow Over and Within a Porous Bed. — Panayotis Prinos, Dimitrios Sofialidis, and Evangelos Keramaris; 129(9), 720-33 (2003).

Two phase flow

Two-Phase Flow Characteristics of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 661-70 (2003).

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Two-dimensional models

Reservoir Routing using Steady and Unsteady Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaiannejad; 129(6), 448-54 (2003).

Investigation on the Suitability of Two-Dimensional Depth-Averaged Models for Bend-Flow Simulation. — T. Y. Hsieh and J. C. Yang; 129(8), 597-612 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Efficient Quasi-Two-Dimensional Model for Water Hammer Problems. — Ming Zhao and Mohamed S. Ghidaoui; 129(12), 1007-13 (2003).

United Kingdom

Self-Cleansing Sewer Design Based on Sediment Transport Principles. — David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Unsteady flow

Explicit Schemes for Dam-Break Simulations. — C. Zoppou and S. Roberts; 129(1), 11-34 (2003).

Advection Tests of Optimal Compact Implicit Scheme. — Ronald Smith and Yongming Tang; 129(5), 408-11 (2003).

Reservoir Routing using Steady and Unsteady

Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaiannejad; 129(6), 448-54 (2003).

Local Time Stepping for Modeling Open Channel Flows. — Amanda J. Crossley, Nigel G. Wright, and Chris D. Whitlow; 129(6), 455-62 (2003).

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Applicability of Kinematic, Noninertia, and Quasi-Steady Dynamic Wave Models to Unsteady Flow Routing. — Christina W. Tsai; 129(8), 613-27 (2003).

Shear Stress Distribution in Partially Filled Pipes. — Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Use of Steady-State Pump Head-Discharge Curve for Unsteady Pipe Flow Applications. — A. M. Al-Khomaini; 129(12), 1001-6 (2003).

Uplift pressure

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Urban areas

Urban Storm Sewer Design: Approach in Consideration of Sediments. — Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Validation

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Valves

Dynamic Modeling of Pressure Reducing Valves. — Simon L. Prescott and Bogumil Ulanicki; 129(10), 804-12 (2003).

Vanes

Phenomenological Characterization of Vortex Induced Scour. — Fredrick Marelus and Konstantin Kornev; 129(12), 976-84 (2003).

Varied flow

Flume for Teaching Spatially Varied Open-Channel Flow. — Joel Cahoon and Takashi Hoshino; 129(10), 813-6 (2003).

Vegetation

Experimental Study of Bed Load Transport through Emergent Vegetation. — Angelina A. Jordanova and C. S. James; 129(6), 474-8 (2003).

Open Channel Flow through Different Forms of Submerged Flexible Vegetation. — C. A. M. E. Wilson, T. Stoesser, P. D. Bates, and A. Bate-mann Pinzen; 129(11), 847-53 (2003).

Velocity

Response of Velocity and Turbulence to Sudden Change of Bed Roughness in Open-Channel Flow. — Xingwei Chen and Yee-Meng Chiew; 129(1), 35-43 (2003).

Side Outflow from Supercritical Channel Flow. — Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Venezuela

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Vertical forces

Evidence of High Vertical Wave-Number Behavior in a Continuously Stratified Reservoir: Boadella, Spain. — Joaquim Pérez-Losada, Elena Roget, and Xavier Casamitjana; 129(9), 734-7 (2003).

Vortices

Phenomenological Characterization of Vortex Induced Scour. — Fredrick Marelus and Konstantin Kornev; 129(12), 976-84 (2003).

Walls

Testing *Block Probes* for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Water circulation

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geofrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geofrey Schladow; 129(2), 92-101 (2003).

Water conduits

Design of Circular Urban Storm Sewer Systems Using Multilinear Muskingum Flow Routing Method. — Hossein M. V. Samani and Saeed Jebelifard; 129(11), 832-8 (2003).

Water depth

Side Outflow from Supercritical Channel Flow. — Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Water discharge

Discharge Rating Equation and Hydraulic Characteristics of Standard Denil Fishways. — Mufeed Odeh; 129(5), 341-8 (2003).

Water flow

Testing *Block Probes* for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Effect of Jet Air Content on Plunge Pool Scour. — Stefano Canepa and Willi H. Hager; 129(5), 358-65 (2003).

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. — L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Numerical and Experimental Study on Two-Dimensional Flood Flows with and without Structures. — Mirei Shige-eda and Juichiro Akiyama; 129(10), 817-21 (2003).

Water hammer

Efficient Quasi-Two-Dimensional Model for Water Hammer Problems. — Ming Zhao and Mohamed S. Ghidaoui; 129(12), 1007-13 (2003).

Water jets

Erosion of Sand by Circular Impinging Water Jets with Small Tailwater. — N. Rajaratnam and K. A. Mazurek; 129(3), 225-9 (2003).

Water levels

Application of Fuzzy Sets Method to Identify Seepage Path through Dams. — L. Opyrchal; 129(7), 546-8 (2003).

Water pollution

Analysis and Prediction of Transverse Mixing Coefficients in Natural Channels. — J. B. Boxall and I. Guymer; 129(2), 129-39 (2003).

Water pressure

Dynamic Modeling of Pressure Reducing Valves. — Simon L. Prescott and Bogumil Ulanicki; 129(10), 804-12 (2003).

Water quality

Advection Tests of Optimal Compact Implicit Scheme. — Ronald Smith and Yongming Tang; 129(5), 408-11 (2003).

Water waves

Explicit Schemes for Dam-Break Simulations. — C. Zoppou and S. Roberts; 129(1), 11-34 (2003).

Wave measurement

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Width

Modeling for Width Adjustment in Alluvial Rivers. — S. V. Chitale; 129(5), 404-7 (2003).

Wind forces

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geoffrey Schladow; 129(2), 92-101 (2003).

Zoning

Simultaneous Zonation and Calibration of Pipe Network Parameters. — A. Bascià and T. Tucciarelli; 129(5), 394-403 (2003).

Author Index

Aardoom, Jeroen H.

Discussion of "Measurement of Bed Load Velocity Using an Acoustic Doppler Current Profiler" by Colin D. Rennie, Robert G. Millar, and Michael A. Church. —Jeroen H. Aardoom; 129(12), 1020 (2003).

Aberle, J.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. —J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Abrahams, Athol D.

Bed-Load Transport Equation for Sheet Flow. —Athol D. Abrahams; 129(2), 159-63 (2003).

Ackermann, Norbert L.

Closure to "Wave Generation in Open Channels by Vortex Shedding from Channel Obstructions" by Laura Zima and Norbert L. Ackermann. —Norbert L. Ackermann; 129(11), 920 (2003).

Ackers, John

Self-Cleansing Sewer Design Based on Sediment Transport Principles. —David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

Adachi, Jou

Side Outflow from Supercritical Channel Flow. —Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Adams, E. Eric

Liquid Volume Fluxes in Stratified Multiphase Plumes. —Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Adrian, D. D.

Determination of Critical Head in Soil Piping. —C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Aguirre-Pe, Julián

Particle Densimetric Froude Number for Estimating Sediment Transport. —Julián Aguirre-Pe, María L. Olivero, and Alix T. Mónica; 129(6), 428-37 (2003).

Ahlfeld, David

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. —David Ahlfeld, Alejandro Joaquin, John Tobiason, and Diane Mas; 129(12), 966-75 (2003).

Ahyerre, Mathieu

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. —Simon J. Tait, Ghassan Chebbo, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Akiyama, Juichiro

Numerical and Experimental Study on Two-Dimensional Flood Flows with and without Structures. —Mirei Shige-eda and Juichiro Akiyama; 129(10), 817-21 (2003).

Al-Khomairi, A. M.

Use of Steady-State Pump Head-Discharge Curve for Unsteady Pipe Flow Applications. —A. M. Al-Khomairi; 129(12), 1001-6 (2003).

Almedej, Jaber H.

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. —Jaber H. Almedej and Panayiotis Diplas; 129(11), 896-904 (2003).

Al-Omari, A. S.

Closure to "Unsteady-State Inverse Chlorine Modeling in Pipe Networks" by A. S. Al-Omari and M. Hanif Chaudhry. —A. S. Al-Omari and M. Hanif Chaudhry; 129(2), 165 (2003).

Ansar, Matahel

Closure to "Experimental Study of 3D Pump-Intake Flows with and without Cross Flow" by Matahel Ansar and Tatsuaki Nakato. —Matahel Ansar and Tatsuaki Nakato; 129(5), 416-7 (2003).

Ansari, Sarfaraz A.

Discussion of "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. —Sarfaraz A. Ansari; 129(7), 554-6 (2003).

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. —Sarfaraz A. Ansari, Umesh C. Kothiyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Apelt, Colin

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. —Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

ASCE River Restoration Subcommittee on Urban Stream Restoration

Urban Stream Restoration. —ASCE River Restoration Subcommittee on Urban Stream Restoration; 129(7), 491-3 (2003).

ASCE Task Committee for Academic Prerequisites for Prof. Practice (TCAP/3)

Discussion of "Civil-Engineering Education: Alternative Paths" by James A. Liggett and Robert Ettema. —ASCE Task Committee for Academic Prerequisites for Prof. Practice (TCAP/3) and Brewer Stouffer; 129(8), 653-5 (2003).

Ashley, Richard

European Research into Sewer Sediments and Associated Pollutants and Processes. —Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Ayotte, Frank J.

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. —William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Balasubramanian, R.

Discussion of "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. —S. M. Thakurdesai, R. Balasubramanian, and Z. S. Tarapore; 129(7), 552-4 (2003).

Barkdoll, Brian D.

Discussion of "Experiments on Flow at a 90° Open-Channel Junction" by Larry J. Weber, Eric D. Schumate, and Nicola Mawer. —Brian D. Barkdoll; 129(2), 167-8 (2003).

Review of *Fluvial Processes* by M. S. Yalin and A. M. Ferreira Da Silva. —Brian D. Barkdoll; 129(2), 169 (2003).

Discussion of "Use of Vanes for Control of Scour at Vertical Wall Abutments" by P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen. —Brian D. Barkdoll; 129(3), 246 (2003).

Barsanti, James R.

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. —William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Bascià, A.

Simultaneous Zonation and Calibration of Pipe Network Parameters. —A. Bascià and T. Tucciarelli; 129(5), 394-403 (2003).

Bates, P. D.

Open Channel Flow through Different Forms of Submerged Flexible Vegetation. —C. A. M. E. Wilson, T. Stoesser, P. D. Bates, and A. Batemann Pinzen; 129(11), 847-53 (2003).

Bechtel, Tom B.

Laminar Pipeline Flow of Wastewater Sludge: Computational Fluid Dynamics Approach. —Tom B. Bechtel; 129(2), 153-8 (2003).

Beck, Stuart

Effect of Floodwater Extraction on Mountain Stream Morphology. —Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Bengassem, Jamal

Hydraulic Performance Index of a Sewer Network. —Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Bennis, Saad

Hydraulic Performance Index of a Sewer Network. —Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Berlamont, Jean E.

Shear Stress Distribution in Partially Filled Pipes. —Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Bezzola, Gian Reto

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Bhambure, S. R.

Discussion of "Experimental Study of 3D Pump-Intake Flows with and without Cross Flow" by Matahel Ansar and Tatsuki Nakato. — P. M. Abdul Rahiman, A. R. Chavan, S. R. Bhambure, and A. S. James; 129(5), 414-6 (2003).

Bocchiola, D.

Testing *Block Probes* for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Boes, Robert M.

Two-Phase Flow Characteristics of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 661-70 (2003).

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Bombardelli, Fabián A.

Hydraulic Design of Large-Diameter Pipes. — Fabián A. Bombardelli and Marcelo H. García; 129(11), 839-46 (2003).

Boxall, J. B.

Analysis and Prediction of Transverse Mixing Coefficients in Natural Channels. — J. B. Boxall and I. Guymer; 129(2), 129-39 (2003).

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Bravo-Espinosa, Miguel

Bedload Transport in Alluvial Channels. — Miguel Bravo-Espinosa, W. R. Osterkamp, and Vicente L. Lopes; 129(10), 783-95 (2003).

Briaud, Jean-Louis

Closure to "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei; 129(7), 556-7 (2003).

Brunella, Sandro

Hydraulics of Bottom Rack Intake. — Sandro Brunella, Willi H. Hager, and Hans-Erwin Minor; 129(1), 2-10 (2003).

Bunte, Kristin

Review of *Sorting Out Sand and Gravel: Sediment Transport and Deposition in Sand-Gravel Bed Rivers* by Maarten Kleinhans. — Kristin Bunte; 129(10), 828-9 (2003).

Butler, David

Self-Cleansing Sewer Design Based on Sediment Transport Principles. — David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

Cahoon, Joel

Flume for Teaching Spatially Varied Open-Channel Flow. — Joel Cahoon and Takashi Hoshino; 129(10), 813-6 (2003).

Canepa, Stefano

Effect of Jet Air Content on Plunge Pool Scour. — Stefano Canepa and Willi H. Hager; 129(5), 358-65 (2003).

Cao, Zhixian

Closure to "Coupled and Decoupled Numerical Modeling of Flow and Morphological Evolution in Alluvial Rivers" by Zhixian Cao, Rodney Day, and Shinji Egashira. — Zhixian Cao, Rodney Day, and Shinji Egashira; 129(9), 743-5 (2003).

Capart, H.

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Cardoso, António H.

Discussion of "Coupled and Decoupled Numerical Modeling of Flow and Morphological Evolution in Alluvial Rivers" by Zhixian Cao, Rodney Day, and Shinji Egashira. — Rui M. L. Ferreira, João G. B. Leal, and António H. Cardoso; 129(9), 741-2 (2003).

Carr, Dennis L.

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Carvalho, João

Closure to "Field Observations of Ipanema Beach Outfall" by João L. B. Carvalho, Philip J. W. Roberts, and João Roldão. — Philip J. W. Roberts and João Carvalho; 129(10), 826-7 (2003).

Casamitjana, Xavier

Evidence of High Vertical Wave-Number Behavior in a Continuously Stratified Reservoir: Boadella, Spain. — Joaquim Pérez-Losada, Elena Roget, and Xavier Casamitjana; 129(9), 734-7 (2003).

Causon, D. M.

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. — L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Cavalletti, Alessandra

Impact of Vertical, Turbulent, Planar, Negatively Buoyant Jet With Rigid Horizontal Bottom Boundary. — Alessandra Cavalletti and Peter A. Davies; 129(1), 54-62 (2003).

Cazanacchi, Dan

Closure to "Experimental Steep, Braided Flow: Application to Flooding Risk on Fans" by Dan Cazanacchi, Chris Paola, and Gary Parker. — Dan Cazanacchi, Chris Paola, and Gary Parker; 129(11), 922 (2003).

Chao, Xiaobo

Development and Application of Oil Spill Model for Singapore Coastal Waters. — Xiaobo Chao, N. Jothi Shankar, and Sam S. Y. Wang; 129(7), 495-503 (2003).

Chaudhry, M. Hanif

Closure to "Unsteady-State Inverse Chlorine Modeling in Pipe Networks" by A. S. Al-Omari and M. Hanif Chaudhry. — A. S. Al-Omari and M. Hanif Chaudhry; 129(2), 165 (2003).

Chavan, A. R.

Discussion of "Experimental Study of 3D Pump-Intake Flows with and without Cross Flow" by Matahel Ansar and Tatsuki Nakato. — P. M. Abdul Rahiman, A. R. Chavan, S. R. Bhambure, and A. S. James; 129(5), 414-6 (2003).

Chebbo, Ghassan

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. — Simon J. Tait, Ghassan Chebbo, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Chen, H. C.

Closure to "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei; 129(7), 556-7 (2003).

Chen, Xingwei

Response of Velocity and Turbulence to Sudden Change of Bed Roughness in Open-Channel Flow. — Xingwei Chen and Yee-Meng Chiew; 129(1), 35-43 (2003).

Cheng, N.-S.

Influence of Turbulence on Bed Load Sediment Transport. — B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Cheng, Nian-Sheng

Discussion of "Two-Phase Flow Analysis of Concentration Profiles" by Blair P. Greimann and Forrest M. Holly Jr. — Nian-Sheng Cheng; 129(3), 245-6 (2003).

Cheung, Kwok Fai

Settling Characteristics of Calcareous Sand. — David A. Smith and Kwok Fai Cheung; 129(6), 479-83 (2003).

Chiew, Yee-Meng

Response of Velocity and Turbulence to Sudden Change of Bed Roughness in Open-Channel Flow. — Xingwei Chen and Yee-Meng Chiew; 129(1), 35-43 (2003).

Chitale, S. V.

Modeling for Width Adjustment in Alluvial Rivers. — S. V. Chitale; 129(5), 404-7 (2003).

Role of Resistance Coefficient in Seasonal Adjustments in Alluvial Rivers. — S. V. Chitale; 129(11), 915-8 (2003).

Chiu, Chao-Lin

Review of *Predictive Statistical Mechanics—A Nonequilibrium Ensemble Formalism* by Roberto Luzzi, A. R. Vasconcellos, and J. Galvao Ramos. — Chao-Lin Chiu; 129(3), 248-9 (2003).

Chou, Yi-Ju

Rolling and Lifting Probabilities for Sediment Entrainment. — Fu-Chun Wu and Yi-Ju Chou; 129(2), 110-9 (2003).

Chrisohoides, Antonis

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. — Antonis Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Chu, Allyson K.

Discretization of Integral Equations Describing Flow in Nonprismatic Channels with Uneven Beds. — Brett F. Sanders, David A. Jaffe, and Allyson K. Chu; 129(3), 235-44 (2003).

Chua, Lloyd H. C.

Influence of Turbulence on Bed Load Sediment Transport. — B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Church, Michael A.

Closure to "Measurement of Bed Load Velocity Using an Acoustic Doppler Current Profiler" by Colin D. Rennie, Robert G. Millar, and Michael A. Church. — Colin D. Rennie, Robert G. Millar, and Michael A. Church; 129(12), 1020-1 (2003).

Clemmens, A. J.

Calibration of Submerged Radial Gates. — A. J. Clemmens, T. S. Strelkoff, and J. A. Replogle; 129(9), 680-7 (2003).

Coleman, Stephen E.

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Closed-Conduit Bed-Form Initiation and Development. — Stephen E. Coleman, Juan J. Fedele, and Marcelo H. Garcia; 129(12), 956-65 (2003).

Cook, Jack

Discussion of "Bibliography for Teaching Hydraulic Design" by ASCE Task Committee on Teaching of Hydraulic Design. — Jack Cook and Thomas Walski; 129(6), 489 (2003).

Copeland, Ronald R.

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Crabtree, Bob

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Crossley, Amanda J.

Local Time Stepping for Modeling Open Channel Flows. — Amanda J. Crossley, Nigel G. Wright, and Chris D. Whitlow; 129(6), 455-62 (2003).

Crowe, Joanna C.

Surface-based Transport Model for Mixed-Size Sediment. — Peter R. Wilcock and Joanna C. Crowe; 129(2), 120-8 (2003).

Dallimore, Chris J.

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Damgaard, Jesper

Sand Transport on Steeply Sloping Plane and Rippled Beds. — Jesper Damgaard, Richard Soulsby, Andrew Peet, and Scott Wright; 129(9), 706-19 (2003).

Davidson, M. J.

Jet Interaction in a Still Ambient Fluid. — H. J. Wang and M. J. Davidson; 129(5), 349-57 (2003).

Davies, Peter A.

Impact of Vertical, Turbulent, Planar, Negatively Buoyant Jet With Rigid Horizontal Bottom Boundary. — Alessandra Cavalletti and Peter A. Davies; 129(1), 54-62 (2003).

Day, Rodney

Closure to "Coupled and Decoupled Numerical Modeling of Flow and Morphological Evolution in Alluvial Rivers" by Zhixian Cao, Rodney Day, and Shinji Egashira. — Zhixian Cao, Rodney Day, and Shinji Egashira; 129(9), 743-5 (2003).

Delleur, Jacques W.

Hydraulics of Sediment Movement in Urban Drainage Systems. — Jacques W. Delleur; 129(4), 251-2 (2003).

The Evolution of Urban Hydrology: Past, Present, and Future. — Jacques W. Delleur; 129(8), 563-73 (2003).

De Sutter, Renaat

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Dey, Subhasish

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhasish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Free Overfall in Inverted Semicircular Channels. — Subhasish Dey; 129(6), 438-47 (2003).

Diplas, Panayiotis

Bedload Transport in Gravel-Bed Streams with Unimodal Sediment. — Jaber H. Almedeij and Panayiotis Diplas; 129(11), 896-904 (2003).

Diwanji, Vasant N.

Closure to "Integrating Equation of Gradually Varied Flow" by Ramappa G. Patil, Vasant N. Diwanji, and Rajnikant M. Khatsuria. — Ramappa G. Patil, Vasant N. Diwanji, and Rajnikant M. Khatsuria; 129(1), 78 (2003).

Doneker, R. L.

Discussion of "Field Observations of Ipanema Beach Outfall" by João L. B. Carvalho, Philip J. W. Roberts, and João Roldão. — G. H. Jirka and R. L. Doneker; 129(10), 823-6 (2003).

Doscher, C.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Doyle, Martin W.

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Egashira, Shinji

Closure to "Coupled and Decoupled Numerical Modeling of Flow and Morphological Evolution in Alluvial Rivers" by Zhixian Cao, Rodney Day, and Shinji Egashira. — Zhixian Cao, Rodney Day, and Shinji Egashira; 129(9), 743-5 (2003).

Eldho, T. I.

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Ettema, Robert

Closure to "Civil-Engineering Education: Alternative Paths" by James A. Liggett and Robert Ettema. — James A. Liggett and Robert Ettema; 129(8), 655-6 (2003).

Falvey, H. T.

Discussion of "Wave Generation in Open Channels by Vortex Shedding from Channel Obstructions" by Laura Zima and Norbert Ackermann. — H. T. Falvey; 129(11), 919 (2003).

Falvey, Henry T.

Alvin Peterka—Hydraulic Engineer. — Willi H. Hager and Henry T. Falvey; 129(9), 657-9 (2003).

Fan, Chi-Yuan

Sewer-Sediment Control: Overview of an Environmental Protection Agency Wet-Weather Flow Research Program. — Chi-Yuan Fan, Richard Field, and Fu-hsiung Lai; 129(4), 253-9 (2003).

Fedele, Juan J.

Closed-Conduit Bed-Form Initiation and Development. — Stephen E. Coleman, Juan J. Fedele, and Marcelo H. Garcia; 129(12), 956-65 (2003).

Feng, Tong

Turbulence Measurements of Dye Concentration and Effects of Secondary Flow on Distribution in Open Channel Flows. — Koji Shiono and Tong Feng; 129(5), 373-84 (2003).

Feng, Zhi-Gang

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthios E. Michaelides; 129(12), 985-94 (2003).

Ferreira, Rui M. L.

Discussion of "Coupled and Decoupled Numerical Modeling of Flow and Morphological Evolution in Alluvial Rivers" by Zhixian Cao, Rodney Day, and Shinji Egashira. — Rui M. L. Ferreira, João G. B. Leal, and António H. Cardoso; 129(9), 741-2 (2003).

Ferreira da Silva, Ana Maria

Review of *River Mechanics* by Pierre Y. Julien. — Ana Maria Ferreira da Silva; 129(11), 923-4 (2003).

Field, Richard

Sewer-Sediment Control: Overview of an Environmental Protection Agency Wet-Weather Flow Research Program. — Chi-Yuan Fan, Richard Field, and Fu-hsiung Lai; 129(4), 253-9 (2003).

Finnie, John

Closure to "Bibliography for Teaching Hydraulic Design" by ASCE Task Committee on Teaching of Hydraulic Design. — John Finnie, Kevin Nielsen, Walt Heyder, and Rollin Hotchkiss; 129(6), 489 (2003).

Fischer, Peter

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Fraser, Alasdair

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Fredsøe, Jørgen

Influence of Turbulence on Bed Load Sediment Transport. — B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

French, Richard H.

Discussion of "Experimental Steep, Braided Flow: Application to Flooding Risk on Alluvial Fans" by D. Cazanacchi, C. Paola, and G. Parker. — Richard H. French and Julianne J. Miller; 129(11), 920-2 (2003).

Garbrecht, Jürgen D.

Review of *Mathematical Models of Small Watershed Hydrology and Applications* by Vijay P. Singh and Donald K. Frevert. — Jürgen D. Garbrecht; 129(7), 558-9 (2003).

García, Marcelo H.

Hydraulic Design of Large-Diameter Pipes. — Fabián A. Bombardelli and Marcelo H. García; 129(11), 839-46 (2003).

Closed-Conduit Bed-Form Initiation and Development. — Stephen E. Coleman, Juan J. Fedele, and Marcelo H. García; 129(12), 956-65 (2003).

García-Martínez, R.

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Gentry, Randall W.

Efficacy of Genetic Algorithm to Investigate Small Scale Aquitard Leakage. — Randall W. Gentry, Daniel Larsen, and Stephanie Ivey; 129(7), 527-35 (2003).

Ghidaoui, Mohamed S.

Efficient Quasi-Two-Dimensional Model for Water Hammer Problems. — Ming Zhao and Mohamed S. Ghidaoui; 129(12), 1007-13 (2003).

Ghodsian, Masoud

Discussion of "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — Masoud Ghodsian; 129(7), 551-2 (2003).

Gillette, David Rees

Review of *Detection and Prevention of Leaks from Dams* edited by Antonio Plata Bedmar and Luís Araguás Araguás. — David Rees Gillette; 129(12), 1023 (2003).

Gisonni, Corrado

Henry Bazin—Civil Engineer. — Willi H. Hager and Corrado Gisonni; 129(3), 171-5 (2003).

Gore, Lance

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Goring, D.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Goring, Derek G.

Closure to "Depiking Acoustic Doppler Velocimeter Data" by Derek G. Goring and Vladimir I. Nikora. — Derek G. Goring and Vladimir I. Nikora; 129(6), 487-8 (2003).

Gotoh, Hiroshi

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Green, M.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Guadagnini, Alberto

Hydrodynamic Loading on River Bridges. — Stefano Malavasi and Alberto Guadagnini; 129(11), 854-61 (2003).

Gudavalli, Rao

Closure to "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei; 129(7), 556-7 (2003).

Guymer, I.

Analysis and Prediction of Transverse Mixing Coefficients in Natural Channels. — J. B. Boxall and I. Guymer; 129(2), 129-39 (2003).

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Hager, Willi H.

Hydraulics of Bottom Rack Intake. — Sandro Brunella, Willi H. Hager, and Hans-Erwin Minor; 129(1), 2-10 (2003).

Discussion of "Experiments on Flow at a 90° Open-Channel Junction" by Larry J. Weber, Eric D. Schumate, and Nicola Mawer. — Willi H. Hager; 129(2), 165-6 (2003).

Henry Bazin—Civil Engineer. — Willi H. Hager and Corrado Gisonni; 129(3), 171-5 (2003).

Effect of Jet Air Content on Plunge Pool Scour. — Stefano Canepa and Willi H. Hager; 129(5), 358-65 (2003).

Alvin Peterka—Hydraulic Engineer. — Willi H. Hager and Henry T. Falvey; 129(9), 657-9 (2003).

Two-Phase Flow Characteristics of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 661-70 (2003).

Hydraulic Design of Stepped Spillways. — Robert M. Boes and Willi H. Hager; 129(9), 671-9 (2003).

Haralampides, Katy

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnappan; 129(3), 230-4 (2003).

Heald, John

Closure to "Discrete Particle Modeling of Entrainment from Flat Uniformly Sized Sediment Beds" by Ian McEwan and John Heald. — Ian McEwan and John Heald; 129(1), 80 (2003).

Herlina

Closure to "An Experimental Study on Turbulent Circular Wall Jets" by Adrian Wing-Keung Law and Herlina. — Adrian Wing-Keung Law and Herlina; 129(9), 740 (2003).

Hey, R. D.

Closure of "Use of Vanes for Control of Scour at Vertical Wall Abutments" by P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen. — P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen; 129(3), 247 (2003).

Heyder, Walt

Closure to "Bibliography for Teaching Hydraulic Design" by ASCE Task Committee on Teaching of Hydraulic Design. — John Finnie, Kevin Nielsen, Walt Heyder, and Rollin Hotchkiss; 129(6), 489 (2003).

Hodges, Ben R.

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Hoffland, Bas

Discussion of "Discrete Particle Modeling of Entrainment from Flat Uniformly Sized Sediment Beds" by Ian McEwan and John Heald. — Bas Hoffland; 129(1), 78-9 (2003).

Hoshino, Takashi

Flume for Teaching Spatially Varied Open-Channel Flow. — Joel Cahoon and Takashi Hoshino; 129(10), 813-6 (2003).

Hotchkiss, Rollin

Closure to "Bibliography for Teaching Hydraulic Design" by ASCE Task Committee on Teaching of Hydraulic Design. — John Finnie, Kevin Nielsen, Walt Heyder, and Rollin Hotchkiss; 129(6), 489 (2003).

Hsieh, T. Y.

Investigation on the Suitability of Two-Dimensional Depth-Averaged Models for Bend-Flow Simulation. — T. Y. Hsieh and J. C. Yang; 129(8), 597-612 (2003).

Huang, S. Y.

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Huygens, Marc

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Hvitved-Jacobsen, Thorkild

European Research into Sewer Sediments and Associated Pollutants and Processes. — Richard Ashley, Bob Crabtree, Alasdair Fraser, and Thorkild Hvitved-Jacobsen; 129(4), 267-75 (2003).

Imberger, Jörg

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Coupling an Underflow Model to a Three-Dimensional Hydrodynamic Model. — Chris J. Dallimore, Ben R. Hodges, and Jörg Imberger; 129(10), 748-57 (2003).

Imran, Jasim

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Ingram, D. M.

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. — L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Ivey, Stephanie

Efficacy of Genetic Algorithm to Investigate Small Scale Aquitard Leakage. — Randall W. Gentry, Daniel Larsen, and Stephanie Ivey; 129(7), 527-35 (2003).

Jaffe, David A.

Discretization of Integral Equations Describing Flow in Nonprismatic Channels with Uneven Beds. — Brett F. Sanders, David A. Jaffe, and Allyson K. Chu; 129(3), 235-44 (2003).

James, A. S.

Discussion of "Experimental Study of 3D Pump-Intake Flows with and without Cross Flow" by Matalhel Ansar and Tatsuki Nakato. — P. M. Abdul Rahiman, A. R. Chavan, S. R. Bhambure, and A. S. James; 129(5), 414-6 (2003).

James, C. S.

Experimental Study of Bed Load Transport through Emergent Vegetation. — Angelina A. Jordanova and C. S. James; 129(6), 474-8 (2003).

James, Scott C.

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Jebelifard, Saeed

Design of Circular Urban Storm Sewer Systems Using Multilinear Muskingum Flow Routing Method. — Hossein M. V. Samani and Saeed Jebelifard; 129(11), 832-8 (2003).

Jepsen, Richard A.

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Jirka, G. H.

Discussion of "Field Observations of Ipanema Beach Outfall" by João L. B. Carvalho, Philip J. W. Roberts, and João Roldão. — G. H. Jirka and R. L. Doneker; 129(10), 823-6 (2003).

Joaquin, Alejandro

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

Jobson, Harvey E.

Closure to "Predicting River Travel Time from Hydraulic Characteristics" by Harvey E. Jobson. — Harvey E. Jobson; 129(5), 414 (2003).

Johnson, P. A.

Closure of "Use of Vanes for Control of Scour at Vertical Wall Abutments" by P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen. — P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen; 129(3), 247 (2003).

Jordanova, Angelina A.

Experimental Study of Bed Load Transport through Emergent Vegetation. — Angelina A. Jordanova and C. S. James; 129(6), 474-8 (2003).

Julien, Pierre

News from the Editorial Board. — Pierre Julien; 129(8), 561-2 (2003).
Annual Review 2003. — Pierre Julien; 129(12), 925-6 (2003).

Kassem, Ahmed

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Keramaris, Evangelos

Turbulent Flow Over and Within a Porous Bed. — Panayotis Prinios, Dimitrios Sofialidis, and Evangelos Keramaris; 129(9), 720-33 (2003).

Khan, Jamil A.

Three-Dimensional Modeling of Negatively Buoyant Flow in Diverging Channels. — Ahmed Kassem, Jasim Imran, and Jamil A. Khan; 129(12), 936-47 (2003).

Khatsuria, Rajnikant M.

Closure to "Integrating Equation of Gradually Varied Flow" by Ramappa G. Patil, Vasant N. Diwanji, and Rajnikant M. Khatsuria. — Ramappa G. Patil, Vasant N. Diwanji, and Rajnikant M. Khatsuria; 129(1), 78 (2003).

Klingeman, Peter C.

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Kornev, Konstantin

Phenomenological Characterization of Vortex Induced Scour. — Fredrick Marelus and Konstantin Kornev; 129(12), 976-84 (2003).

Kothyari, Umesh C.

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. — Sarfaraz A. Ansari, Umesh C. Kothyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Krishnappan, B. G.

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnappan; 129(3), 230-4 (2003).

Kumar, M. S. Mohan

Discussion of "Unsteady-State Inverse Chlorine Modeling in Pipe Networks" by A. S. Al-Omari and M. Hanif Chaudhry. — M. S. Mohan Kumar and G. R. Munavalli; 129(2), 164-5 (2003).

Lai, Fu-hsiung

Sewer-Sediment Control: Overview of an Environmental Protection Agency Wet-Weather Flow Research Program. — Chi-Yuan Fan, Richard Field, and Fu-hsiung Lai; 129(4), 253-9 (2003).

Lai, Yong G.

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Lamarre, Pierre

Hydraulic Performance Index of a Sewer Network. — Saad Bennis, Jamal Bengassem, and Pierre Lamarre; 129(7), 504-10 (2003).

Larsen, Daniel

Efficacy of Genetic Algorithm to Investigate Small Scale Aquitard Leakage. — Randall W. Gentry, Daniel Larsen, and Stephanie Ivey; 129(7), 527-35 (2003).

Laval, Bernard

Reducing Numerical Diffusion Effects with Pycnocline Filter. — Bernard Laval, Ben R. Hodges, and Jörg Imberger; 129(3), 215-24 (2003).

Leal, João G. B.

Discussion of "Coupled and Decoupled Numerical Modeling of Flow and Morphological Evolution in Alluvial Rivers" by Zhixian Cao, Rodney Day, and Shinji Egashira. — Rui M. L. Ferreira, João G. B. Leal, and António H. Cardoso; 129(9), 741-2 (2003).

Lian, Yanqing

Comparison of Risk Calculation Methods for a Culvert. — Yanqing Lian and Ben Chie Yen; 129(2), 140-52 (2003).

Lien, Hui-Pang

Sediment Concentration Distribution of Debris Flow. — Hui-Pang Lien and Fang-Wu Tsai; 129(12), 995-1000 (2003).

Liggett, James A.

Closure to "Civil-Engineering Education: Alternative Paths" by James A. Liggett and Robert Ettema. — James A. Liggett and Robert Ettema; 129(8), 655-6 (2003).

Lim, Siow-Yong

Total Load Transport Formula for Flow in Alluvial Channels. — Shu-Qing Yang and Siow-Yong Lim; 129(1), 68-72 (2003).

Lopes, Vicente L.

Bedload Transport in Alluvial Channels. — Miguel Bravo-Espinosa, W. R. Osterkamp, and Vicente L. Lopes; 129(10), 783-95 (2003).

López, J. L.

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Luyckx, Gert

Shear Stress Distribution in Partially Filled Pipes. — Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Macchione, Francesco

Practical Aspects in Comparing Shock-Capturing Schemes for Dam Break Problems. — Francesco Macchione and Maria Assunta Morelli; 129(3), 187-95 (2003).

Malavasi, Stefano

Hydrodynamic Loading on River Bridges. — Stefano Malavasi and Alberto Guadagnini; 129(11), 854-61 (2003).

Marelius, Fredrick

Phenomenological Characterization of Vortex Induced Scour. — Fredrick Marelius and Konstantin Kornev; 129(12), 976-84 (2003).

Mas, Diane

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiasson, and Diane Mas; 129(12), 966-75 (2003).

May, Richard

Self-Cleansing Sewer Design Based on Sediment Transport Principles. — David Butler, Richard May, and John Ackers; 129(4), 276-82 (2003).

May, Richard W. P.

Preventing Sediment Deposition in Inverted Sewer Siphons. — Richard W. P. May; 129(4), 283-90 (2003).

Mazurek, K. A.

Erosion of Sand by Circular Impinging Water Jets with Small Tailwater. — N. Rajaratnam and K. A. Mazurek; 129(3), 225-9 (2003).

McCorquodale, J. Alex

Deposition Properties of Fine Sediment. — Katy Haralampides, J. Alex McCorquodale, and B. G. Krishnappan; 129(3), 230-4 (2003).

McEwan, I.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

McEwan, Ian

Closure to "Discrete Particle Modeling of Entrainment from Flat Uniformly Sized Sediment Beds" by Ian McEwan and John Heald. — Ian McEwan and John Heald; 129(1), 80 (2003).

McLean, S.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Melville, Bruce W.

Fluvial Entrainment of Protruding Fractured Rock. — Stephen E. Coleman, Bruce W. Melville, and Lance Gore; 129(11), 872-84 (2003).

Menduni, G.

Testing *Block Probes* for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Mia, Md. Faruque

Design Method of Time-Dependent Local Scour at Circular Bridge Pier. — Md. Faruque Mia and Hiroshi Nago; 129(6), 420-7 (2003).

Michaelides, Efsthathios E.

Fluid-Particle Interactions and Resuspension in Simple Shear Flow. — Zhi-Gang Feng and Efsthathios E. Michaelides; 129(12), 985-94 (2003).

Millar, Robert G.

Closure to "Measurement of Bed Load Velocity Using an Acoustic Doppler Current Profiler" by Colin D. Rennie, Robert G. Millar, and Michael A. Church. — Colin D. Rennie, Robert G. Millar, and Michael A. Church; 129(12), 1020-1 (2003).

Miller, Julianne J.

Discussion of "Experimental Steep, Braided Flow: Application to Flooding Risk on Alluvial Fans" by D. Cazanacchi, C. Paola, and G. Parker. — Richard H. French and Julianne J. Miller; 129(11), 920-2 (2003).

Mingham, C. G.

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. — L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Minor, Hans-Erwin

Hydraulics of Bottom Rack Intake. — Sandro Brunella, Willi H. Hager, and Hans-Erwin Minor; 129(1), 2-10 (2003).

Mizumura, Kazumasa

Side Outflow from Supercritical Channel Flow. — Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Moncada, Alix T.

Particle Densimetric Froude Number for Estimating Sediment Transport. — Julián Aguirre-Pe, María L. Olivero, and Alix T. Moncada; 129(6), 428-37 (2003).

Monismith, Stephen G.

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geoffrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Morelli, Maria Assunta

Practical Aspects in Comparing Shock-Capturing Schemes for Dam Break Problems. — Francesco Macchione and Maria Assunta Morelli; 129(3), 187-95 (2003).

Munavalli, G. R.

Discussion of "Unsteady-State Inverse Chlorine Modeling in Pipe Networks" by A. S. Al-Omari and M. Hanif Chaudhry. — M. S. Mohan Kumar and G. R. Munavalli; 129(2), 164-5 (2003).

Naden, Pamela S.

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Nago, Hiroshi

Design Method of Time-Dependent Local Scour at Circular Bridge Pier. — Md. Faruque Mia and Hiroshi Nago; 129(6), 420-7 (2003).

Nakato, Tatsuaki

Closure to "Experimental Study of 3D Pump-Intake Flows with and without Cross Flow" by Matahel Ansar and Tatsuaki Nakato. — Matahel Ansar and Tatsuaki Nakato; 129(5), 416-7 (2003).

Nalluri, Chandra

Urban Storm Sewer Design: Approach in Consideration of Sediments. — Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Nie, Meng-Xi

Effect of Lateral Deflector on Outlet Cavity Lengths. — Meng-Xi Nie, Xu-Sheng Wang, and Guang-Hao Wu; 129(7), 536-40 (2003).

Nielsen, Chris

Parameters Affecting the Performance of Wetting and Drying in a Two-Dimensional Finite Element Long Wave Hydrodynamic Model. — Chris Nielsen and Colin Apelt; 129(8), 628-36 (2003).

Nielsen, Kevin

Closure to "Bibliography for Teaching Hydraulic Design" by ASCE Task Committee on Teaching of Hydraulic Design. — John Finnie, Kevin Nielsen, Walt Heyder, and Rollin Hotchkiss; 129(6), 489 (2003).

Nikora, V.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Nikora, Vladimir I.

Closure to "Depiking Acoustic Doppler Velocimeter Data" by Derek G. Goring and Vladimir I. Nikora. — Derek G. Goring and Vladimir I. Nikora; 129(6), 487-8 (2003).

Odeh, Mufeed

Discharge Rating Equation and Hydraulic Characteristics of Standard Denil Fishways. — Mufeed Odeh; 129(5), 341-8 (2003).

Ohtsu, Iwao

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Ojha, C. S. P.

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Olivero, María L.

Particle Densimetric Froude Number for Estimating Sediment Transport. — Julián Aguirre-Pe, María L. Olivero, and Alix T. Moncada; 129(6), 428-37 (2003).

Olsen, N. R. B.

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Olsen, Nils Reidar B.

Three-Dimensional CFD Modeling of Self-Forming Meandering Channel. — Nils Reidar B. Olsen; 129(5), 366-72 (2003).

Opyrchal, L.

Application of Fuzzy Sets Method to Identify Seepage Path through Dams. — L. Opyrchal; 129(7), 546-8 (2003).

O'Riordan, Owen C.

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Osterkamp, W. R.

Bedload Transport in Alluvial Channels. — Miguel Bravo-Espinosa, W. R. Osterkamp, and Vicente L. Lopes; 129(10), 783-95 (2003).

Ota, Jose J.

Urban Storm Sewer Design: Approach in Consideration of Sediments. — Jose J. Ota and Chandra Nalluri; 129(4), 291-7 (2003).

Pani, B. S.

Discussion of "An Experimental Study on Turbulent Circular Wall Jets" by Adrian Wing-Keung Law and Herlina. — B. S. Pani and Lakshmanagouda G. Patil; 129(9), 738-40 (2003).

Pantokratoras, Asterios

Vertical Penetration of Double-Diffusive Water Plumes Discharged Vertically Downward. — Asterios Pantokratoras; 129(7), 541-5 (2003).

Paola, Chris

Closure to "Experimental Steep, Braided Flow: Application to Flooding Risk on Fans" by Dan Cazanaceli, Chris Paola, and Gary Parker. — Dan Cazanaceli, Chris Paola, and Gary Parker; 129(11), 922 (2003).

Parker, Gary

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Closure to "Experimental Steep, Braided Flow: Application to Flooding Risk on Fans" by Dan Cazanaceli, Chris Paola, and Gary Parker. — Dan Cazanaceli, Chris Paola, and Gary Parker; 129(11), 922 (2003).

Parsons, Daniel R.

Discussion of "Three-Dimensional Numerical Study of Flows in Open-Channel Junctions" by Jianchun Huang, Larry J. Weber, and Yong G. Lai. — Daniel R. Parsons; 129(10), 822-3 (2003).

Patel, V. C.

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Patil, Lakshmanagouda G.

Discussion of "An Experimental Study on Turbulent Circular Wall Jets" by Adrian Wing-Keung Law and Herlina. — B. S. Pani and Lakshmanagouda G. Patil; 129(9), 738-40 (2003).

Patil, Ramappa G.

Closure to "Integrating Equation of Gradually Varied Flow" by Ramappa G. Patil, Vasant N. Diwanji, and Rajnikant M. Khatsuria. — Ramappa G. Patil, Vasant N. Diwanji, and Rajnikant M. Khatsuria; 129(1), 78 (2003).

Peet, Andrew

Sand Transport on Steeply Sloping Plane and Rippled Beds. — Jesper Damgaard, Richard Soulsby, Andrew Peet, and Scott Wright; 129(9), 706-19 (2003).

Pérez-Losada, Joaquim

Evidence of High Vertical Wave-Number Behavior in a Continuously Stratified Reservoir: Boadella, Spain. — Joaquim Pérez-Losada, Elena Roget, and Xavier Casamitjana; 129(9), 734-7 (2003).

Perugu, Suresh

Closure to "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei; 129(7), 556-7 (2003).

Petersen, Margaret S.

How I Became a Hydraulic Engineer. — Margaret S. Petersen; 129(5), 335-9 (2003).

Pinzen, A. Batemann

Open Channel Flow through Different Forms of Submerged Flexible Vegetation. — C. A. M. E. Wilson, T. Stoesser, P. D. Bates, and A. Batemann Pinzen; 129(11), 847-53 (2003).

Pisano, William C.

Automated Sewer and Drainage Flushing Systems in Cambridge, Massachusetts. — William C. Pisano, Owen C. O'Riordan, Frank J. Ayotte, James R. Barsanti, and Dennis L. Carr; 129(4), 260-6 (2003).

Ponce, Victor M.

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. — Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Prescott, Simon L.

Dynamic Modeling of Pressure Reducing Valves. — Simon L. Prescott and Bogumil Ulanicki; 129(10), 804-12 (2003).

Prinos, Panayotis

Turbulent Flow Over and Within a Porous Bed. — Panayotis Prinos, Dimitrios Sofialidis, and Evangelos Keramaris; 129(9), 720-33 (2003).

Qian, L.

Cartesian Cut Cell Two-Fluid Solver for Hydraulic Flow Problems. — L. Qian, D. M. Causon, D. M. Ingram, and C. G. Mingham; 129(9), 688-96 (2003).

Rahiman, P. M. Abdul

Discussion of "Experimental Study of 3D Pump-Intake Flows with and without Cross Flow" by Matahel Ansar and Tatsuki Nakato. — P. M. Abdul Rahiman, A. R. Chavan, S. R. Bhambure, and A. S. James; 129(5), 414-6 (2003).

Rajaratnam, N.

Erosion of Sand by Circular Impinging Water Jets with Small Tailwater. — N. Rajaratnam and K. A. Mazurek; 129(3), 225-9 (2003).

Raju, Kittur G. Ranga

Influence of Cohesion on Scour under Submerged Circular Vertical Jets. — Sarfaraz A. Ansari, Umesh C. Kothiyari, and Kittur G. Ranga Raju; 129(12), 1014-9 (2003).

Rameshwaran, Ponnambalam

Three-Dimensional Numerical Simulation of Compound Channel Flows. — Ponnambalam Rameshwaran and Pamela S. Naden; 129(8), 645-52 (2003).

Ramey, Michael

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Rennie, Colin D.

Closure to "Measurement of Bed Load Velocity Using an Acoustic Doppler Current Profiler" by Colin D. Rennie, Robert G. Millar, and Michael A. Church. — Colin D. Rennie, Robert G. Millar, and Michael A. Church; 129(12), 1020-1 (2003).

Replegle, J. A.

Calibration of Submerged Radial Gates. — J. A. Clemmens, T. S. Strelkoff, and J. A. Replegle; 129(9), 680-7 (2003).

Revelli, Roberto

Closure to "Fuzzy Approach for Analysis of Pipe Networks" by Roberto Revelli and Luca Ridolfi. — Roberto Revelli and Luca Ridolfi; 129(7), 550-1 (2003).

Ridolfi, Luca

Closure to "Fuzzy Approach for Analysis of Pipe Networks" by Roberto Revelli and Luca Ridolfi. — Roberto Revelli and Luca Ridolfi; 129(7), 550-1 (2003).

Roberts, Jesse D.

Measurements of Sediment Erosion and Transport with the Adjustable Shear Stress Erosion and Transport Flume. — Jesse D. Roberts, Richard A. Jepsen, and Scott C. James; 129(11), 862-71 (2003).

Roberts, Philip J. W.

Closure to "Field Observations of Ipanema Beach Outfall" by João L. B. Carvalho, Philip J. W. Roberts, and João Roldão. — Philip J. W. Roberts and João Carvalho; 129(10), 826-7 (2003).

Roberts, S.

Explicit Schemes for Dam-Break Simulations. — C. Zoppou and S. Roberts; 129(1), 11-34 (2003).

Roget, Elena

Evidence of High Vertical Wave-Number Behavior in a Continuously Stratified Reservoir: Boadella, Spain. — Joaquim Pérez-Losada, Elena Roget, and Xavier Casamitjana; 129(9), 734-7 (2003).

Rosgen, D. L.

Closure of "Use of Vanes for Control of Scour at Vertical Wall Abutments" by P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen. — P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen; 129(3), 247 (2003).

Rueda, Francisco J.

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geoffrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geoffrey Schladow; 129(2), 92-101 (2003).

Rushforth, Peter

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Rushforth, Peter J.

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Saavedra, I.

Dynamic Wave Study of Flow in Tidal Channel System of San Juan River. — I. Saavedra, J. L. López, and R. García-Martínez; 129(7), 519-26 (2003).

Samani, Hossein M. V.

Reservoir Routing using Steady and Unsteady Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaiannejad; 129(6), 448-54 (2003).

Design of Circular Urban Storm Sewer Systems Using Multilinear Muskingum Flow Routing Method. — Hossein M. V. Samani and Saeed Jebelifard; 129(11), 832-8 (2003).

Samani, Jamal M. V.

Reservoir Routing using Steady and Unsteady Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaiannejad; 129(6), 448-54 (2003).

Sanders, Brett F.

Discretization of Integral Equations Describing Flow in Nonprismatic Channels with Uneven Beds. — Brett F. Sanders, David A. Jaffe, and Allyson K. Chu; 129(3), 235-44 (2003).

Saul, Adrian

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Saul, Adrian J.

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. — Simon J. Tait, Ghassan Chebbo, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Schatzmann, Markus

Rheological Behavior of Fine and Large Particle Suspensions. — Markus Schatzmann, Peter Fischer, and Gian Reto Bezzola; 129(10), 796-803 (2003).

Schladow, S. Geoffrey

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geoffrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Dynamics of Large Polymictic Lake. II: Numerical Simulations. — Francisco J. Rueda and S. Geoffrey Schladow; 129(2), 92-101 (2003).

Schmid, Bernhard H.

Discussion of "Prediction of Sediment Load Concentration in Rivers Using Artificial Neural Network Model" by H. M. Nagy, K. Watanabe, and M. Hirano. — Bernhard H. Schmid; 129(9), 745-6 (2003).

Sellgren, A.

Interaction of Particles and Near-Wall Lift in Slurry Pipelines. — K. C. Wilson and A. Sellgren; 129(1), 73-6 (2003).

Shaiannejad, Mohammad

Reservoir Routing using Steady and Unsteady Flow through Rockfill Dams. — Hossein M. V. Samani, Jamal M. V. Samani, and Mohammad Shaiannejad; 129(6), 448-54 (2003).

Shankar, N. Jothi

Development and Application of Oil Spill Model for Singapore Coastal Waters. — Xiaobo Chao, N. Jothi Shankar, and Sam S. Y. Wang; 129(7), 495-503 (2003).

Shetty, Ampar V.

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. — Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Shields, F. Douglas, Jr.

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Shige-eda, Mirei

Numerical and Experimental Study on Two-Dimensional Flood Flows with and without Structures. — Mirei Shige-eda and Juichiro Akiyama; 129(10), 817-21 (2003).

Shiono, Koji

Turbulence Measurements of Dye Concentration and Effects of Secondary Flow on Distribution in Open Channel Flows. — Koji Shiono and Tong Feng; 129(5), 373-84 (2003).

Simon, Andrew

Design for Stream Restoration. — F. Douglas Shields, Jr., Ronald R. Copeland, Peter C. Klingeman, Martin W. Doyle, and Andrew Simon; 129(8), 575-84 (2003).

Singh, Sushil K.

Explicit Estimation of Aquifer Diffusivity from Linear Stream Stage. — Sushil K. Singh; 129(6), 463-9 (2003).

Treatment of Stagnant Zones in Riverine Advection-Dispersion. — Sushil K. Singh; 129(6), 470-3 (2003).

Storage Coefficient and Transmissivity from Residual Drawdowns. — Sushil K. Singh; 129(8), 637-44 (2003).

Singh, V. P.

Determination of Critical Head in Soil Piping. — C. S. P. Ojha, V. P. Singh, and D. D. Adrian; 129(7), 511-8 (2003).

Skipworth, Peter J.

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. — Simon J. Tait, Ghassan Chebbo, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Smart, Graeme

Aspect Ratio to Maximize Sediment Transport in Rigid Bank Channels. — Guoliang Yu and Graeme Smart; 129(12), 927-35 (2003).

Smith, David A.

Settling Characteristics of Calcareous Sand. — David A. Smith and Kwok Fai Cheung; 129(6), 479-83 (2003).

Smith, Ronald

Advection Tests of Optimal Compact Implicit Scheme. — Ronald Smith and Yongming Tang; 129(5), 408-11 (2003).

Socolofsky, Scott A.

Liquid Volume Fluxes in Stratified Multiphase Plumes. — Scott A. Socolofsky and E. Eric Adams; 129(11), 905-14 (2003).

Sofialidis, Dimitrios

Turbulent Flow Over and Within a Porous Bed. — Panayotis Prinos, Dimitrios Sofialidis, and Evangelos Keramaris; 129(9), 720-33 (2003).

Sotiropoulos, Fotis

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. — Antonis Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Soulsby, Richard

Sand Transport on Steeply Sloping Plane and Rippled Beds. — Jesper Damgaard, Richard Soulsby, Andrew Peet, and Scott Wright; 129(9), 706-19 (2003).

Srivastava, Rajesh

Discussion of "Integrating Equation of Gradually Varied Flow" by Ramappa G. Patil, Vasant N. Diwanji, and Rajnikant M. Khatsuria. — Rajesh Srivastava; 129(1), 77-8 (2003).

Stacey, Mark T.

Dynamics of Large Polymictic Lake. I: Field Observations. — Francisco J. Rueda, S. Geoffrey Schladow, Stephen G. Monismith, and Mark T. Stacey; 129(2), 82-91 (2003).

Stoesser, T.

Open Channel Flow through Different Forms of Submerged Flexible Vegetation. — C. A. M. E. Wilson, T. Stoesser, P. D. Bates, and A. Bate-mann Pinzen; 129(11), 847-53 (2003).

Stouffer, Brewer

Discussion of "Civil-Engineering Education: Alternative Paths" by James A. Liggett and Robert Ettema. — ASCE Task Committee for Academic Prerequisites for Prof. Practice (TCAP/3) and Brewer Stouffer; 129(8), 653-5 (2003).

Strelkoff, T. S.

Calibration of Submerged Radial Gates. — A. J. Clemmens, T. S. Strelkoff, and J. A. Replogle; 129(9), 680-7 (2003).

Sturm, Terry W.

Coherent Structures in Flat-Bed Abutment Flow: Computational Fluid Dynamics Simulations and Experiments. — Antonis Chrisohoides, Fotis Sotiropoulos, and Terry W. Sturm; 129(3), 177-86 (2003).

Sumer, B. Mutlu

Influence of Turbulence on Bed Load Sediment Transport. — B. Mutlu Sumer, Lloyd H. C. Chua, N.-S. Cheng, and Jørgen Fredsøe; 129(8), 585-96 (2003).

Taher-shamsi, Ahmad

Dam-Breach Flood Wave Propagation Using Dimensionless Parameters. — Victor M. Ponce, Ahmad Taher-shamsi, and Ampar V. Shetty; 129(10), 777-82 (2003).

Tait, Simon

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Tait, Simon J.

Movement of Total Suspended Solids in Combined Sewers. — Adrian J. Saul, Peter J. Skipworth, Simon J. Tait, and Peter J. Rushforth; 129(4), 298-307 (2003).

Modeling the Erosion of Mixtures of Organic and Granular In-Sewer Sediments. — Peter J. Rushforth, Simon J. Tait, and Adrian J. Saul; 129(4), 308-15 (2003).

Modeling In-Sewer Deposit Erosion to Predict Sewer Flow Quality. — Simon J. Tait, Ghassan Chebbo, Peter J. Skipworth, Mathieu Ahyerre, and Adrian J. Saul; 129(4), 316-24 (2003).

Tang, Yongming

Advection Tests of Optimal Compact Implicit Scheme. — Ronald Smith and Yongming Tang; 129(5), 408-11 (2003).

Tarapore, Z. S.

Discussion of "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — S. M. Thakurdesai, R. Balasubramanian, and Z. S. Tarapore; 129(7), 552-4 (2003).

Tessier, M.

Closure of "Use of Vanes for Control of Scour at Vertical Wall Abutments" by P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen. — P. A. Johnson, R. D. Hey, M. Tessier, and D. L. Rosgen; 129(3), 247 (2003).

Thakurdesai, S. M.

Discussion of "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — S. M. Thakurdesai, R. Balasubramanian, and Z. S. Tarapore; 129(7), 552-4 (2003).

Ting, Francis C. K.

Closure to "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei; 129(7), 556-7 (2003).

Tobiason, John

Case Study: Impact of Reservoir Stratification on Interflow Travel Time. — David Ahlfeld, Alejandro Joaquin, John Tobiason, and Diane Mas; 129(12), 966-75 (2003).

Toro-Escobar, Carlos M.

Effect of Floodwater Extraction on Mountain Stream Morphology. — Gary Parker, Carlos M. Toro-Escobar, Michael Ramey, and Stuart Beck; 129(11), 885-95 (2003).

Trouw, Koen

Shear Stress Distribution in Partially Filled Pipes. — Jean E. Berlamont, Koen Trouw, and Gert Luyckx; 129(9), 697-705 (2003).

Tsai, Christina W.

Applicability of Kinematic, Noninertia, and Quasi-Steady Dynamic Wave Models to Unsteady Flow Routing. — Christina W. Tsai; 129(8), 613-27 (2003).

Tsai, Fang-Wu

Sediment Concentration Distribution of Debris Flow. — Hui-Pang Lien and Fang-Wu Tsai; 129(12), 995-1000 (2003).

Tucciarelli, T.

Simultaneous Zonation and Calibration of Pipe Network Parameters. — A. Bascià and T. Tucciarelli; 129(5), 394-403 (2003).

Ulanicki, Bogumil

Dynamic Modeling of Pressure Reducing Valves. — Simon L. Prescott and Bogumil Ulanicki; 129(10), 804-12 (2003).

Verhoeven, Ronny

Validation of Existing Bed Load Transport Formulas Using In-Sewer Sediment. — Renaat De Sutter, Peter Rushforth, Simon Tait, Marc Huygens, Ronny Verhoeven, and Adrian Saul; 129(4), 325-33 (2003).

Wahl, Tony L.

Discussion of "Despiking Acoustic Doppler Velocimeter Data" by Derek G. Goring and Vladimir I. Nikora. — Tony L. Wahl; 129(6), 484-7 (2003).

Walesh, Stuart G.

Discussion of "Civil-Engineering Education: Alternative Paths" by James A. Liggett and Robert Ettema. — Stuart G. Walesh; 129(8), 653 (2003).

Walsh, J.

Straight Benthic Flow-Through Flume for In Situ Measurement of Cohesive Sediment Dynamics. — J. Aberle, V. Nikora, S. McLean, C. Doscher, I. McEwan, M. Green, D. Goring, and J. Walsh; 129(1), 63-7 (2003).

Walski, Thomas

Discussion of "Bibliography for Teaching Hydraulic Design" by ASCE Task Committee on Teaching of Hydraulic Design. — Jack Cook and Thomas Walski; 129(6), 489 (2003).

Wang, H. J.

Jet Interaction in a Still Ambient Fluid. — H. J. Wang and M. J. Davidson; 129(5), 349-57 (2003).

Wang, Sam S. Y.

Development and Application of Oil Spill Model for Singapore Coastal Waters. — Xiaobo Chao, N. Jothi Shankar, and Sam S. Y. Wang; 129(7), 495-503 (2003).

Wang, Xu-Sheng

Effect of Lateral Deflector on Outlet Cavity Lengths. — Meng-Xi Nie, Xu-Sheng Wang, and Guang-Hao Wu; 129(7), 536-40 (2003).

Ward, David

Testing *Block Probes* for Wall Shear Stress Measurement in Water Flows. — D. Bocchiola, G. Menduni, and David Ward; 129(2), 102-9 (2003).

Weber, Larry J.

Nonhydrostatic Three-Dimensional Model for Hydraulic Flow Simulation. I: Formulation and Verification. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 196-205 (2003).

Nonhydrostatic Three-Dimensional Method for Hydraulic Flow Simulation. II: Validation and Application. — Yong G. Lai, Larry J. Weber, and V. C. Patel; 129(3), 206-14 (2003).

Wei, Gengsheng

Closure to "Flume Tests for Scour in Clay at Circular Piers" by Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei. — Francis C. K. Ting, Jean-Louis Briaud, H. C. Chen, Rao Gudavalli, Suresh Perugu, and Gengsheng Wei; 129(7), 556-7 (2003).

Westrich, Bernhard

Hydraulics of Submerged Jet Subject to Change in Cohesive Bed Geometry. — Subhasish Dey and Bernhard Westrich; 129(1), 44-53 (2003).

Whitlow, Chris D.

Local Time Stepping for Modeling Open Channel Flows. — Amanda J. Crossley, Nigel G. Wright, and Chris D. Whitlow; 129(6), 455-62 (2003).

Wilcock, Peter R.

Surface-based Transport Model for Mixed-Size Sediment. — Peter R. Wilcock and Joanna C. Crowe; 129(2), 120-8 (2003).

Wilson, C. A. M. E.

Validation of a Three-Dimensional Numerical Code in the Simulation of Pseudo-Natural Meandering Flows. — C. A. M. E. Wilson, J. B. Boxall, I. Guymer, and N. R. B. Olsen; 129(10), 758-68 (2003).

Open Channel Flow through Different Forms of Submerged Flexible Vegetation. — C. A. M. E. Wilson, T. Stoesser, P. D. Bates, and A. Bate-mann Pinzen; 129(11), 847-53 (2003).

Wilson, K. C.

Interaction of Particles and Near-Wall Lift in Slurry Pipelines. — K. C. Wilson and A. Sellgren; 129(1), 73-6 (2003).

Wing-Keung Law, Adrian

Closure to "An Experimental Study on Turbulent Circular Wall Jets" by Adrian Wing-Keung Law and Herlina. — Adrian Wing-Keung Law and Herlina; 129(9), 740 (2003).

Wong, Tommy S. W.

Discussion of "Predicting River Travel Time from Hydraulic Characteristics" by Harvey E. Jobson. — Tommy S. W. Wong; 129(5), 412-4 (2003).

Wright, Nigel G.

Local Time Stepping for Modeling Open Channel Flows. — Amanda J. Crossley, Nigel G. Wright, and Chris D. Whitlow; 129(6), 455-62 (2003).

Wright, Scott

Sand Transport on Steeply Sloping Plane and Rippled Beds. — Jesper Damgaard, Richard Soulsby, Andrew Peet, and Scott Wright; 129(9), 706-19 (2003).

Wu, Fu-Chun

Rolling and Lifting Probabilities for Sediment Entrainment. — Fu-Chun Wu and Yi-Ju Chou; 129(2), 110-9 (2003).

Wu, Guang-Hao

Effect of Lateral Deflector on Outlet Cavity Lengths. — Meng-Xi Nie, Xu-Sheng Wang, and Guang-Hao Wu; 129(7), 536-40 (2003).

Xu, Chengchao

Discussion of "Fuzzy Approach for Analysis of Pipe Networks" by Roberto Revelli and Luca Ridolfi. — Chengchao Xu; 129(7), 549-50 (2003).

Yamasaka, Masashige

Side Outflow from Supercritical Channel Flow. — Kazumasa Mizumura, Masashige Yamasaka, and Jou Adachi; 129(10), 769-76 (2003).

Yang, J. C.

Investigation on the Suitability of Two-Dimensional Depth-Averaged Models for Bend-Flow Simulation. — T. Y. Hsieh and J. C. Yang; 129(8), 597-612 (2003).

Yang, Shu-Qing

Total Load Transport Formula for Flow in Alluvial Channels. — Shu-Qing Yang and Siow-Yong Lim; 129(1), 68-72 (2003).

Yasuda, Youichi

Flow Conditions of Undular Hydraulic Jumps in Horizontal Rectangular Channels. — Iwao Ohtsu, Youichi Yasuda, and Hiroshi Gotoh; 129(12), 948-55 (2003).

Yen, Ben Chie

Comparison of Risk Calculation Methods for a Culvert. — Yanqing Lian and Ben Chie Yen; 129(2), 140-52 (2003).

Young, D. L.

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Yu, Guoliang

Aspect Ratio to Maximize Sediment Transport in Rigid Bank Channels. — Guoliang Yu and Graeme Smart; 129(12), 927-35 (2003).

Zech, Y.

Treatment of Natural Geometry in Finite Volume River Flow Computations. — H. Capart, T. I. Eldho, S. Y. Huang, D. L. Young, and Y. Zech; 129(5), 385-93 (2003).

Zhao, Ming

Efficient Quasi-Two-Dimensional Model for Water Hammer Problems. — Ming Zhao and Mohamed S. Ghidaoui; 129(12), 1007-13 (2003).

Zoppou, C.

Explicit Schemes for Dam-Break Simulations. — C. Zoppou and S. Roberts; 129(1), 11-34 (2003).